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NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

AN ANALYSIS OF THE REPUBLIC OF CHINA
DEFENSE PROCUREMENT DIVISION'S
SUPPLIER SOURCING PROCESS

by

Shih-Hao Wang

June 1991

Thesis Advisor:

Rodney F. Matsushima

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An Analysis of the Republic of China Defense Procurement
Division's Supplier Sourcing Process

by

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Lieutenant, Republic of China Navy
B.S., Chinese Naval Academy, 1985

Submitted in partial fulfillment of the requirements for
the degree of

MASTER OF SCIENCE IN MANAGEMENT

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ABSTRACT

The Federal Acquisition Regulation prescribes the fundamental procedures of supplier sourcing process to be used and followed by the Government contracting officers after the purchase request has been received. Many commercial publications also promulgate the principles of the supplier sourcing process. As a foreign purchasing office in the United States, supplier sourcing is the most critical issue in the Republic of China Defense Procurement Division.

This thesis compares the current supplier sourcing process as outlined in the Federal Acquisition Regulation, at a US Navy Inventory Control Point and at two private sector companies who specialize in providing hard-to-find repair parts, with the Republic of China Defense Procurement Division. The results of this thesis are some recommendations that would help improve the Republic of China Defense Procurement Division's supplier sourcing process.

TABLE OF CONTENTS

I.	INTRODUCTION	1
A.	AREA OF RESEARCH.....	2
B.	RESEARCH QUESTIONS.....	3
C.	OBJECTIVE.....	3
D.	SCOPE OF THE THESIS.....	3
E.	METHODOLOGY	4
F.	THESIS ORGANIZATION.....	4
II.	BACKGROUND.....	6
A.	THE FEDERAL ACQUISITION REGULATION (FAR) REQUIREMENTS.....	6
1.	Purchase Request.....	7
2.	Requirements Determination.....	7
a.	Required Sources?.....	8
b.	Small Purchase.....	8
c.	Set-Asides determination.....	9
d.	Foreign Acquisition	9
3.	Preparing Solicitation.....	9
a.	Requirements Evaluation	9
b.	FAR 6.401(a).....	10
c.	Sealed Bidding Method (FAR Part 14).....	11
d.	Negotiations Method (FAR Part 15).....	11
e.	Contract Type Determination.....	11
f.	Solicitation Drafting.....	12
4.	Publicizing Contract Actions.....	12
a.	Expects <2 Offers	12
b.	Display in a Public Place.....	14
c.	Special Publicizing Arrangements Determination.....	14

d. CBD and/or Other Media.....	14
e. Presolicitation Notices and Conferences.....	15
f. Synopsizing.....	15
g. 10 (6) /days After Synopsis Transmittal.....	15
h. FAR 5.202(a)(2)	16
5. Market Research and Analysis	16
6. Initial Solicitation List.....	16
7. Final Solicitation List.....	17
8. Notice Been Published >15 Days	17
9. Solicitation Issuance	17
B. SUPPLIER SOURCING BY THE PRIVATE SECTOR.....	17
1. Needs Identified.....	19
a. Origins of requirements.....	19
b. Purchase Descriptions.....	20
(1) Detailed Specifications.....	20
(2) Other Purchase Descriptions	20
2. Market Research	21
a. Traditional Information Sources.....	22
(1) Business guides:	22
(2) Directories:.....	22
(3) Bibliographies:.....	23
(4) Almanacs:.....	23
(5) Encyclopedias:.....	24
(6) Handbooks:.....	24
b. Periodicals and Newspaper	24
c. Looseleaf Services.....	25
d. Government Information and Services.....	25
e. Catalogs and Pamphlets	26
f. Electronic Business Information.....	26
3. Matching Sources to Needs.....	26

4.	Tailoring the Source List.....	27
5.	Supplier Qualification.....	29
6.	Presolicitation Negotiation	29
7.	Contract Method Determination	30
8.	Solicitation Issuance	32
C.	SUMMARY.....	32
III.	BACKGROUND: CURRENT PRACTICES IN THE US.....	34
A.	SHIPS PARTS CONTROL CENTER (SPCC), MECHANICSBURG, PA.....	34
1.	Computer Files.....	35
2.	Requirements Determination	35
3.	Assigning a PR Number	35
4.	Documentation.....	35
5.	PR Evaluation	36
a.	Limited Screening	36
b.	Packaging Requirement	36
c.	Technical Review.....	36
6.	Screening.....	37
B.	FMS CORPORATION.....	37
1.	Purchase Requirements.....	38
2.	Pre-Screening/Validation.....	39
3.	Priority Requisitions.....	40
4.	Item Research.....	40
5.	Vendor Selection/Request for Quotation.....	41
6.	Solicitation.....	43
C.	WILLIAMS AND WATTS INC. (W&W).....	43
1.	Purchase Requirements	44
2.	Expert Sourcing System (ESS).....	44
a.	Source Control	44
b.	Qualified Product Lists (QPL).....	44

c. Government Drawings and Authorized Manufacturers	45
d. Commercial P/N Distributors	45
e. P/N Prefix.....	45
f. Government CAGE and Government Pricing History (GPH).....	45
g. Commercial P/N and GPH.....	45
h. RNCC 3 or 5, Variation 2	45
3. Soliciting Sources	46
D. SUMMARY.....	46
IV. REPUBLIC OF CHINA DEFENSE PROCUREMENT DIVISION (ROCDPD).....	47
A. BACKGROUND.....	47
B. THE PROCUREMENT ENVIRONMENT.....	49
1. Taiwan Relations Act (TRA).....	49
2. The Joint Communiqué.....	50
3. The Acquisition Operation Procedure Manual (AOPM) and Defense Acquisition Regulation (DAR)	51
C. SOURCES OF REQUIREMENT.....	52
D. ORGANIZATIONS.....	54
1. Foreign Military Procurement (FMP)	55
a. Pre-Case Activities.....	58
b. Submit Request.....	58
c. Price and Availability (P&A) Approval.....	59
d. Letter of Agreement.....	59
e. Program Status Review.....	59
f. Mutual Consensus	60
g. Case Closure.....	60
2. Commercial Procurement (CP)	61
a. Planning Division (PD).....	61
b. Contracting Division (CD).....	62
c. Contract Administration Division (CAD)	63

3. Special Mission Assignments.....	64
D. CP PURCHASING PROCEDURE.....	64
1. Key Events in the Planning Division	65
a. Verify Case Content	65
b. Establish Computer File.....	65
c. Clarification and Amendment (C&A).....	67
d. Manufacturer's Validation.....	67
(1) Debarment or Suspension	67
(2) D&B Business Credit Service	67
e. Prerequisite Vendor or Manufacturer	69
f. Vendor?.....	69
g. Conform to DAR, 55	69
h. Sourcing.....	69
(1) Select Suppliers	70
(2) Prioritizing	71
(3) Final List	71
2. Key Events in the Contracting Division.....	72
a. Greater Than Certain Amount?.....	72
b. Setting Ceiling Price.....	72
c. Invitation for Bids (IFB).....	73
d. "Responseless"	73
e. Cost Analysis	73
f. Sole Source.....	75
g. Pre-Award Negotiation	75
h. Meet Requirements?.....	75
i. Source Selection.....	76
j. Auction.....	76
k. Award.....	77
l. Drafting Contract	77
m. Negotiation.....	77

n. Contract Signed.....	77
(1) KTR Signed?	77
(2) Free On Board or Free Alongside Ship (FOB/FAS).....	79
(3) Letter of Credit (LOC) Payment.....	79
3. Key Events in the Contract Administration Division	79
a. Post-Award Negotiation	79
b. Document Verification	81
E. SUMMARY.....	81
V. PROBLEM ANALYSIS.....	82
A. ASSUMPTIONS.....	82
B. PROBLEM IDENTIFICATION AND ANALYSIS.....	82
1. Workload Instability	83
a. Discussion	83
b. Analysis	84
2. Inefficient Information Access	86
a. Discussion	86
b. Analysis	87
3. Poor Information Management System.....	88
a. Discussion	88
b. Analysis	88
4. Lack of sourcing criteria	89
a. Discussion	89
b. Analysis	90
5. Insufficient Competition	90
a. Discussion	90
b. Analysis	90
6. Poor Specifications or Purchase Descriptions.....	92
a. Discussion	92
b. Analysis	93
7. Lack of Technical Support	93

a. Discussion	94
b. Analysis	94
8. Small Quantity Requirements.....	94
a. Discussion	94
b. Analysis	95
9. Downward Trend in the Value of Procurements	95
a. Discussion	96
b. Analysis	96
C. SUMMARY.....	97
VI. CONCLUSIONS AND RECOMMENDATIONS.....	100
A. INTRODUCTION.....	100
B. CONCLUSIONS.....	100
1. The Republic of China Defense Procurement Division (ROCDPD) can improve its supplier sourcing process.....	100
2. The ROCDPD continues to encounter supplier sourcing and pricing problems primarily due to the small quantities being submitted on purchase requests.....	101
3. Top management must recognize that the supplier sourcing system needs to be improved and support the Commercial Procurement (CP) area by providing better resources.....	101
C. RECOMMENDATIONS.....	102
1. Top management should take a more proactive role and take appropriate actions to improve the ROCDPD supplier sourcing process.....	102
2. Implement steps to improve and upgrade the office automation equipment within the ROCDPD.....	102
3. The management information system in the ROCDPD should be improved or modified to provide better support to the Planning Division.....	103
4. The ROCDPD should participate in the acquisition planning phase and institute a feedback system.....	103
5. The ROCDPD should publicize their proposed contract actions for unclassified items.....	104

6.	The ROCDPD should consider dividing their requirements into more efficient categories.....	104
7.	If the ROCDPD implements recommendation 6, the office should develop clear criteria and procedures.	105
8.	The ROCDPD should establish long-term relationships with suppliers.	105
D.	ANSWERS TO RESEARCH QUESTIONS.....	105
1.	What are the ROCDPD's standard supplier sourcing procedures?.....	105
2.	What types of supplier sourcing problems are being experienced by the ROCDPD?	106
3.	What resources of information are available to the ROCDPD?	106
4.	Can the ROCDPD employ some of the methods and procedures being utilized by DoD activities?.....	107
E.	AREAS FOR FUTURE RESEARCH	107
	LIST OF REFERENCES	109
	INITIAL DISTRIBUTION LIST.....	110

LIST OF FIGURES

Fig. 1 Supplier Sourcing Process Outlined in the FAR.....	7
Fig. 2 FAR Requirements Determination	8
Fig. 3 FAR Solicitation Process.....	10
Fig. 4 Publicizing Contract Actions by the FAR.....	13
Fig. 5 Private Sector Supplier Sourcing Process	18
Fig. 6 Types of Business Guides	22
Fig. 7 U.S. Business Enterprises	23
Fig. 8 Types of Business Periodicals	24
Fig. 9 Types of Newspapers of Interest to the Business Community	25
Fig. 10 SPCC PR Flow Diagram	34
Fig. 11 Supplier Sourcing Process Within the FMS Co.	38
Fig. 12 Supplier Sourcing Process for W&W Inc.	44
Fig. 13 Requirement Sources of the ROCDPD	53
Fig. 14 Organizational Structure of the ROCDPD	55
Fig. 15 Process of the FMP Cases	57
Fig. 16 Requirements Submission Process	58
Fig. 17 Levels of FMS Case Closures	60
Fig. 18 Simplified CP Path.....	65
Fig. 19 PD Operational Process	66
Fig. 20 Manufacturer's Validation Process.....	68
Fig. 21 Sourcing Procedures in the PD.....	70
Fig. 22 CD Operational Process.....	74
Fig. 23 Process After Contract Signed in the CD.....	78
Fig. 24 CAD Operational Process.....	80
Fig. 25 Unit Price Calculations – Sperry Diode.....	95

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I. INTRODUCTION

The Republic of China (ROC) established a stable long-term military relationship with the United States (US) after World War II during the Administration of the late-president Chiang Kai-shek. This military cooperation continued from the second World War through the Kin-Men¹, Korean, and Vietnam Wars. The ROC, during this long period of coalition, either purchased (Foreign Military Sales) or received (Foreign Military Assistance) numerous supplies, weapons and equipment from the US [Ref. 1:p. 10]. To maintain and operate this equipment adequately, the ROC established a supply system similar to the United States' with US national stock numbers, material nomenclatures, manuals, etc.

This relationship between the US and the ROC in the 1950s and 1960s created a dependence on the US for repair parts. In order to maintain their US manufactured equipment, the ROC established a purchasing office in the US.

Shortly after the unilateral decision by the Carter Administration to terminate the official relationships with the ROC and to recognize the People's Republic of China (PROC) as the sole "China," the Taiwan Relations Act (TRA) was enacted by the US Congress. The TRA required that the

¹Kin-Men is the name of a group of small islands, which is located between mainland China and Taiwan. In 1949-1950, Communist China (PROC) initiated a series of battles trying to take over those islands as a stepping-stone for further warfare against the Taiwan main island. Those battles are generally referred to as Kin-Men War.

annual amount of FMS to the ROC government be subject to a dollar limitation, which decreases every year to a minimum level determined by the US Congress and the President. FMS is confined to defensive weapons by the TRA, which prompted the ROC to become independent in defense and more efficient in weapons procurement.

The efforts by the ROC to attain defense independence has yielded impressive results in the ROC defense industry. Increasing foreign military procurement has always been a controversial and challenging subject in the ROC because of the changing political climate. Peking's outspoken objections and demands for other countries to boycott military sales to Taiwan have also increased the challenge.

Because of this historical relationship between the ROC and the US, requirements for the ROC military range from up-to-date weapon systems to outdated destroyer spare parts. The limitations and the downward trend for FMS, as defined in the TRA, increase the complexity and difficulty for the ROC foreign military procurement system to fulfill broad domestic requirements. To meet this challenging task, the Republic of China Defense Procurement Division (ROCDPD) was created.

A. AREA OF RESEARCH

This research will analyze the procurement support provided by the ROCDPD and examine how it develops needed sources. Methods used by organizations in the US will be compared and recommendations made to improve the ROCDPD's supplier sourcing process.

B. RESEARCH QUESTIONS

The primary research question to be addressed in this thesis is: How can the Republic Of China Defense Procurement Division improve its system by improving its supplier sourcing process?

The subsidiary questions are:

1. What are the ROCDPD's standard supplier sourcing procedures?
2. What types of supplier sourcing problems are being experienced by the ROCDPD?
3. What resources of information are available to the ROCDPD?
4. Can the ROCDPD employ some of the methods and procedures being utilized by DoD activities?

C. OBJECTIVE

The objective of this thesis is to examine the ROCDPD's supplier sourcing process. The information obtained through this research will be used to evaluate the supplier sourcing methodology used by the ROCDPD and provide recommendations for improvements. Historical data and records are critical to this thesis, yet inherent limitations of the ROCDPD and unavailable information may not make a full-scale evaluation possible. If this is the case, the assumptions used in the analysis will be identified.

D. SCOPE OF THE THESIS

The supplier sourcing process is defined as the technique used to develop and maintain a viable supplier database and to generate suppliers for the solicitation list. Deficiencies generated from the supplier sourcing process in the ROCDPD's current organization affects the entire procurement process.

This research will also examine how supplier sourcing is being accomplished at the US Navy's Ships Parts Control Center (SPCC),

Mechanicsburg, PA., and by Williams and Watts Inc. (W&W) and FMS Corporation, two private firms who specialized in acquiring hard to find repair parts. This information will be used for comparison purposes and incorporated into the proposed sourcing model for the ROCDPD.

E. METHODOLOGY

There were three primary sources of information used in the preparation of this thesis: a comprehensive literature review, telephone interviews, and personal interviews with personnel at the ROCDPD, SPCC, W&W and FMS.

In addition to library catalogs and periodical index guides, a search of the Defense Logistics Studies Information Exchange (DLSIE) was conducted to gain an understanding of the market research area. Other books, articles, and documents pertaining to the the supplier sourcing process and the contracting environment were used to support this thesis research. The Federal Acquisition Regulation was examined in detail and used as a source of information.

The telephone and personal interviews were conducted with key staff members of the ROCDPD and appropriate US agencies. These interviews were conducted in an effort to understand the current supplier sourcing practices being utilized by those agencies.

F. THESIS ORGANIZATION

This thesis will begin in Chapter II by first outlining the US Federal Government's supplier sourcing process based upon the requirements of the Federal Acquisition Regulation (FAR) and secondly, discussing the general private sector business principles involved with supplier sourcing. Chapter

III will examine the supplier sourcing process being used by three activities. One Government buying activity and two private sector companies. Chapter IV will start by discussing the environment within which the ROCDPD is operating under and continue by outlining the supplier sourcing process being used by the ROCDPD. Chapter V will identify, analyze and discuss the supplier sourcing problems in the ROCDPD. Finally, Chapter VI will provide conclusions and recommendations for improvement of the ROCDPD's supplier sourcing process. This chapter will also provide the answers to the research questions.

II. BACKGROUND

The purpose of this chapter is to discuss and flow diagram the supplier sourcing process outlined in the Federal Acquisition Regulation (FAR) and to discuss the supplier sourcing process, better known as market research, being followed by the private firms.

The sourcing process, as defined by the FAR, is well documented and begins with the requirements definition and ends when the solicitation list is completed. Within the private sector, the supplier sourcing process is not very well documented and is associated with the marketing process.

This chapter will examine the supplier sourcing process required by the FAR and by the private sector. This information will be used to form a theoretical basis for comparison with the process being followed by the ROCDPD.

A. THE FEDERAL ACQUISITION REGULATION (FAR) REQUIREMENTS

The supplier sourcing process required by the FAR is summarized in Figure 1. The "*" mark contained in the flow charts of this chapter signifies that a subjective decision by the Contracting Officer is required. This section assumes that the reader is familiar with typical contracting terms and the FAR. Each step in the flow diagram is summarized to the maximum extent possible.

1. Purchase Request

The purchase request is the document used to convey a requiree's needs and to provide funding to the contracting office. The contracting office begins work on the requirement upon receipt of the purchase request.

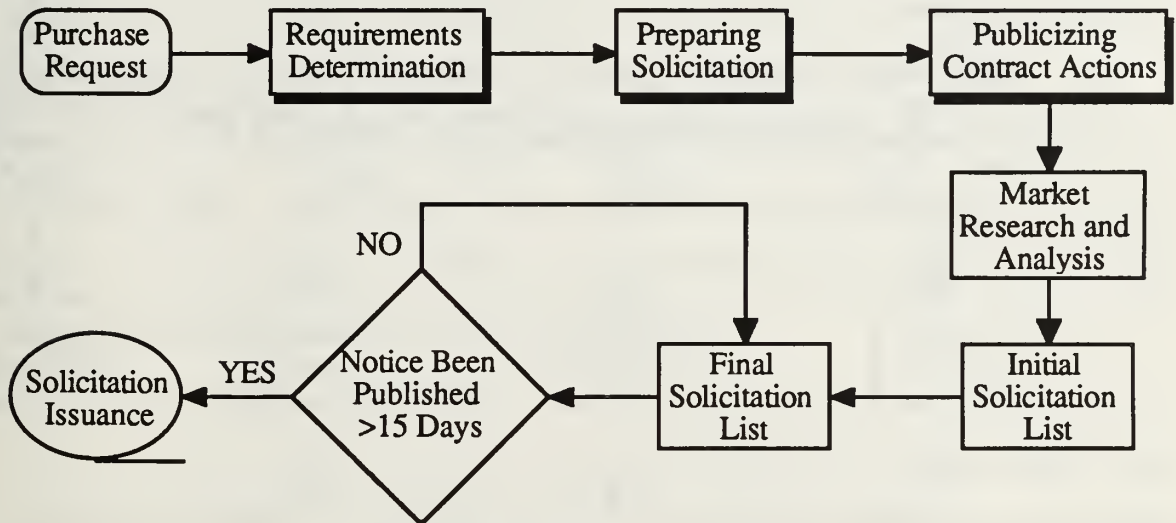


Fig. 1 Supplier Sourcing Process Outlined in the FAR

2. Requirements Determination

Upon receipt of the purchase request, the CO reviews the requirements and makes several immediate determinations relating to the proposed acquisition. These determinations include:

- a. a review of the required sources of supply
- b. a determination if the requirement could be purchased using small purchase procedures
- c. a determination if the requirement should be set-aside for small business only or for firms located in labor surplus areas
- d. a review of the applicability of foreign acquisition laws

The requirements determination process is depicted in Figure 2 and discussed in more detail.

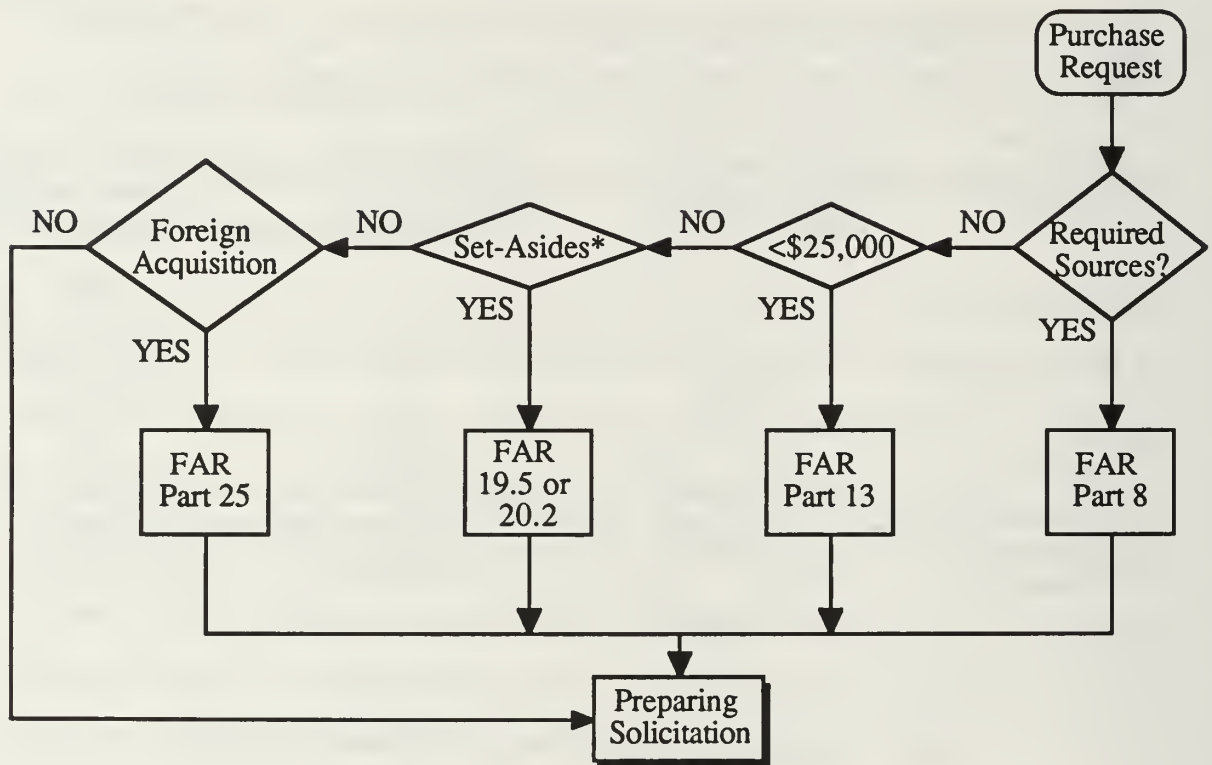


Fig. 2 FAR Requirements Determination

a. Required Sources?

As required by the FAR in Part 8, the CO reviews the requirements and determines whether the proposed acquisition should be acquired from or through a mandatory Government or commercial source.

b. Small Purchase

The CO determines whether the estimated aggregate amount for the proposed acquisition exceeds \$25,000 or not. For those requirements whose estimated value are under \$25,000, the CO follows the procedures and

policies prescribed in FAR Part 13. Part 13 outlines the procedures to be followed under the simplified small purchase procedures.

c. Set-Asides determination

A Set-Aside determination is the process of reserving an acquisition or a class of acquisitions exclusively for participation by a particular group of concerns. There are two categories of set-asides:

- (1) Small business set-aside (see FAR 19.5)
- (2) Labor surplus area set-aside (see FAR 20.2)

A firm must qualify for the particular set-aside before they could submit an offer and be considered for an award.

d. Foreign Acquisition

As required by the FAR in Part 25, the CO determines if the proposed acquisition is subject to mandated laws and regulations which affect products being provided by foreign sources of supply. Laws such as the Buy American Act, Balance of Payments Program, and the Trade Agreements Act of 1979 protect domestic suppliers in some manner from foreign competition.

3. Preparing Solicitation

After the required determinations have been made, the CO begins preparation for issuance of the solicitation of the proposed acquisition. The steps in the process used in preparing the solicitation is depicted in Figure 3. Each step is discussed and summarized below.

a. Requirements Evaluation

The requirements in the purchase request are evaluated to ensure that all appropriate terms and conditions are identified for inclusion in the solicitation. The elements of the purchase request which need to be

evaluated include: the description/specification, packaging and packing requirements, quality assurance requirements, deliveries and/or performance schedule, proposed sources, funding, and any other special requirements.

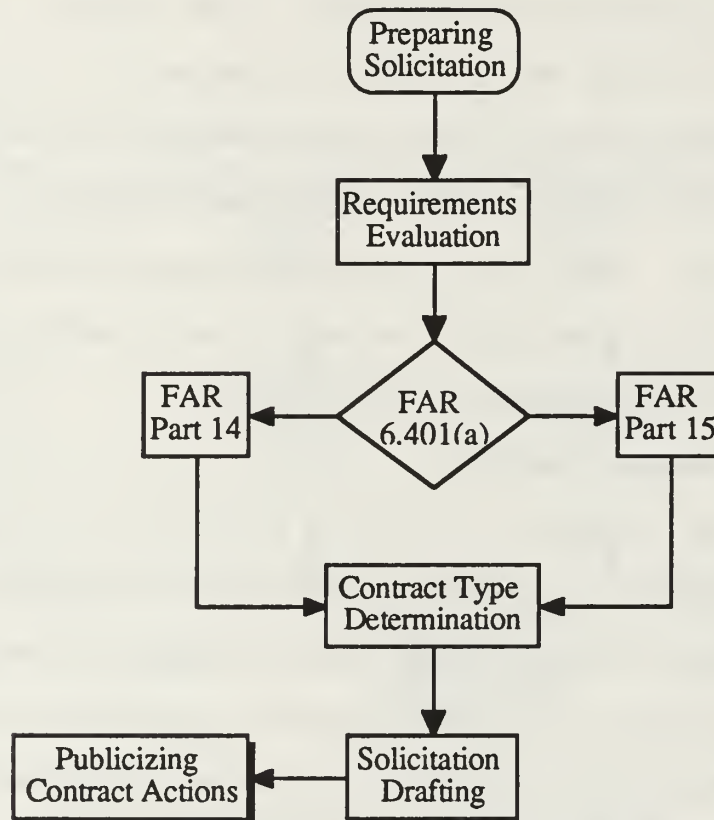


Fig. 3 FAR Solicitation Process

b. FAR 6.401(a)

As stated in the FAR, "Contracting officers shall exercise good judgement in selecting the method of contracting that best meets the needs of the Government." There are two methods available to the contracting officer. They are sealed bidding and negotiations. The major criteria that distinguishes the two methods of contracting are:

- (1) the degree of available competition,
- (2) time constraints,

- (3) completeness of the item description, and
- (4) the degree that price and price-related factors influences the award.

The contracting officer decides on the proper contracting method for use in satisfying the requirement.

c. Sealed Bidding Method (FAR Part 14)

FAR Part 14 prescribes the policies and procedures associated with the sealed bidding method. The solicitation used by sealed bidding is called the Invitation for Bids (IFB).

d. Negotiations Method (FAR Part 15)

FAR Part 15 prescribes the policies and procedures associated with the negotiation method. The Requests for Proposals (RFP's) and Requests for Quotations (RFQ's) are solicitation methods used in the negotiation method.

e. Contract Type Determination

Generally, contract types can be divided into two broad categories: fixed price and cost reimbursement contracts. At this point of the acquisition, the contract type determination is a preliminary decision based on the degree of cost risk to be assumed by the contractor. The contract type finally used in the contract may be modified in response to negotiations or other events.

General principles in the FAR that relate to the use of contract types are summarized as follows. Firm-fixed-price contracts shall be used when the method of contracting is sealed bidding; it may integrate economic price adjustment clauses if authorized. On the other hand, the competitive

negotiation method allows the use of the entire range of contract types. The cost-plus-a-percentage-of-cost type of contract is prohibited by the regulations.

f. Solicitation Drafting

The CO prepares the solicitation as well as the resulting contract using the uniform contract format outlined in the FAR, except when small purchases procedures are utilized. The CO prepares the RFP's, IFB's or RFQ's on Standard Forms. The solicitation informs the offerors about the Government's needs and the terms and conditions envisioned by the Government to be used in the final contract.

4. Publicizing Contract Actions

One of the important steps in the Government supplier sourcing process is the act of publicizing the Government's requirements. As cited in the FAR, "Contracting officers shall publicize contract actions in order to— [Ref. 2:p. 5-1]

(1) Increase competition;

(2) Broaden industry participation in meeting Government requirements; and

(3) Assist small business concerns, small disadvantaged business concerns, and labor surplus area concerns in obtaining contracts and subcontracts."

The FAR process used to publicize contract requirements is depicted in Figure 4. Only the pertinent steps are discussed.

a. Expects <2 Offers

This decision point reflects the Government's policy to foster full and open competition. If there is not a reasonable expectation that at least

two offers will be received from responsive and responsible offerors for contract actions expected to exceed \$10,000 and not to exceed \$25,000, the CO is required to synopsize the requirement in the Commerce Business Daily.

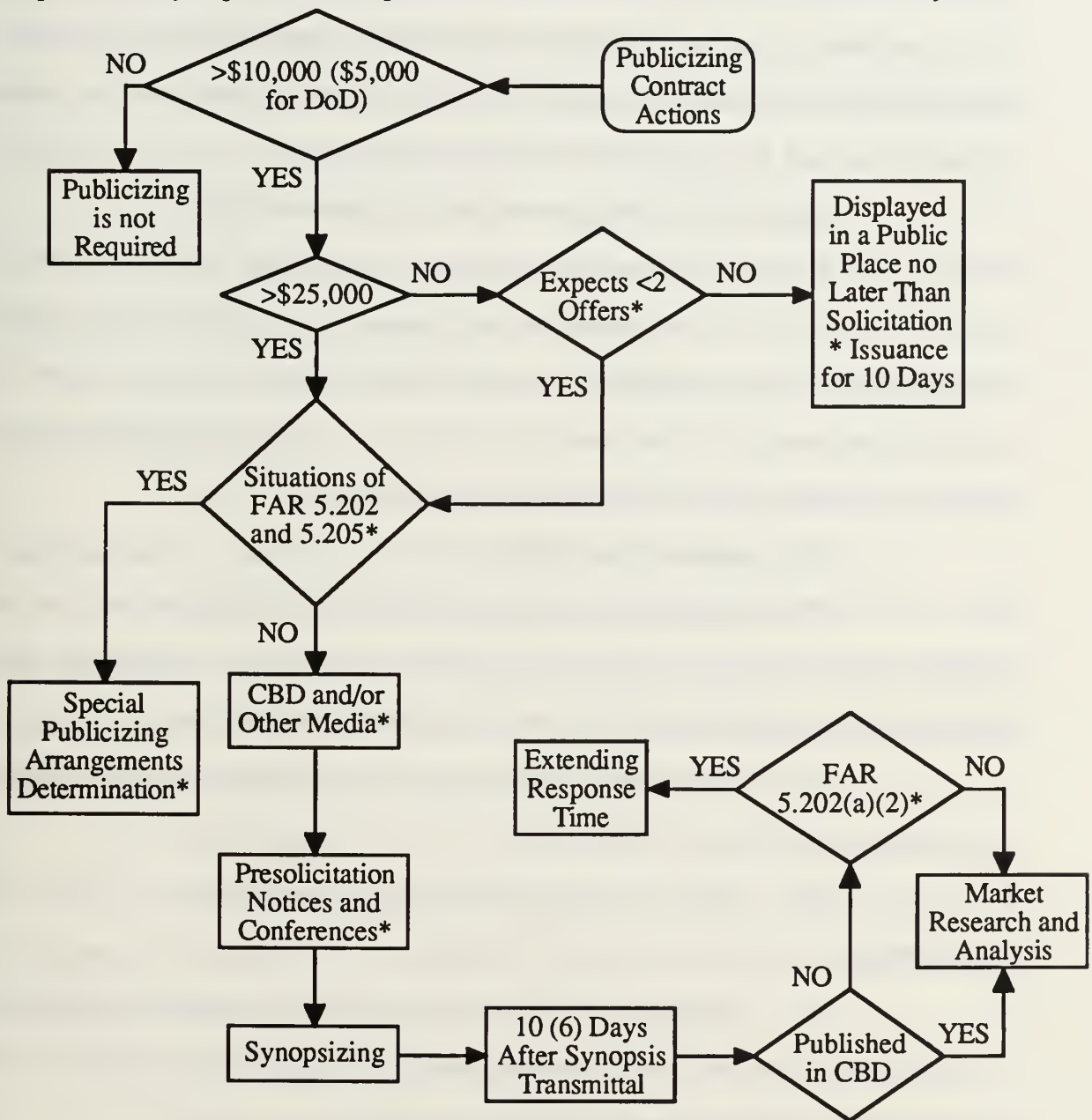


Fig. 4 Publicizing Contract Actions by the FAR

b. Display in a Public Place

If reasonable competition exists for proposed contract actions greater than \$10,000 (\$5,000 for defense materials), but less than \$25,000, the CO is required to post an unclassified notice of or a copy of the solicitation in a public location no later than the date the solicitation is issued and to remain posted for at least 10 days regardless of the date of award.

c. Special Publicizing Arrangements Determination

There are situations when the contracting officer determines that it is not in the Government's best interest to synopsize the contract requirement. These situations normally reflect overwhelming urgency or security requirements. The contracting officer is allowed within the FAR to grant an exception to the FAR synopsis requirements.

d. CBD and/or Other Media

The requirement to disseminate contract information does not apply to the CBD only. FAR Part 5.101(b) identifies the following other methods that may be used to disseminate contract information:

- (1) Preparing periodic handouts listing proposed contracts and displaying them in a public place;
- (2) Disseminating information to the members of local trade associations;
- (3) Making brief announcements of proposed contracts to newspapers, trade journals, magazines, or other mass communication media for publication without cost to the Government;

(4) Placing paid advertisements in newspaper or other communications media, subject to the limitations prescribed in the FAR 5.101(b)(4).

e. Presolicitation Notices and Conferences

A presolicitation conference or notice is used in the negotiated method when the contracting officer has a need to—

- (1) Develop or identify interested sources;
- (2) Request preliminary information based on a general description of the supplies or services involved;
- (3) Explain complicated specifications and requirements to interested sources; and
- (4) Aid prospective contractors in later submitting proposals without undue expenditure of effort, time, and money.

The CO publicizes presolicitation notices in the CBD. Presolicitation notices and conferences are not only used in negotiated acquisitions but also in sealed bidding and other special categories of contract if the CO feels that it is in the best interest of the Government.

f. Synopsizing

The CO prepares and transmits the synopsis notice to the Commerce Business Daily in sufficient detail to assure that the Government attains the maximum competition for the requirement.

g. 10 (6) /days After Synopsis Transmittal

Because the CO is required to delay transmittal of the solicitation to its potential sources for 15 days after the synopsis has been printed in the CBD in competitive procurements and 30 days for sole source procurements,

the CO is allowed (for planning purposes) to estimate when the announcement will appear in the CBD. The FAR says that the "CO may, unless he/she has evidence to the contrary, presume that notice has been published 10 days (6 days if electronically transmitted) following transmittal of the synopsis to the CBD." [Ref. 2:p. 5-3]

h. FAR 5.202(a)(2)

If the contracting officer used the planning timeframes and released the solicitation but learns that the notice has not in fact been published within the presumed timeframes, the CO must determine if an extension of the bid opening/proposal closing dates should be extended to comply with the regulations.

5. Market Research and Analysis

Market research and analysis should be conducted as soon as the Government's needs have been functionally described to ascertain the availability of commercial products to meet those needs and to identify market practices. Market research and analysis cited in this step represent the contribution of information obtained from the synopsis; such information includes informational requests for quotations and responses to the CBD or other media.

6. Initial Solicitation List

The initial solicitation list should include all prospective contractors in the solicitation mailing list and requests generated from the CBD announcement. The solicitation mailing list is established and maintained by the contracting activity. The list of companies is separated by commodity

groupings. In accordance with FAR 5.102, any company can request to be added to the initial solicitation list.

7. Final Solicitation List

The initial solicitation list is normally reduced if the number of prospective contractors on the solicitation mailing list is excessively long or the solicitation involves classified information. The methods used to reduce an excessive number of companies on a solicitation mailing list are stated in the FAR 14.205-4. Classified information contained in the solicitation is handled as prescribed by the agency regulations.

8. Notice Been Published >15 Days

This decision point is to verify whether the notice has been published in the CBD for more than 15 days to meet the statutory requirement before issuance of the solicitation.

9. Solicitation Issuance

The solicitation is mailed to all prospective contractors on the bidders mailing list.

B. SUPPLIER SOURCING BY THE PRIVATE SECTOR

Most of the publications on private sector contracting are contained within the purchasing or procurement field. In general, the same principles which govern Government contracting apply to the private sector contracting. While the principles are basically the same, there are significant differences. These differences can be categorized by the following attributes: size, diversity, sovereignty, regulations, sources of funds, public review, socioeconomic programs, conservatism [Ref. 3:pp. 678-683]. In addition to the

attributes mentioned, the buyer-supplier relationships and accountability should also be taken into account.

These differences have a remarkable impact on the supplier sourcing process. This chapter will discuss the general supplier sourcing process utilized by the private sector.

The supplier sourcing process for the private sector is summarized in Figure 5. Each step in this process is discussed in this chapter.

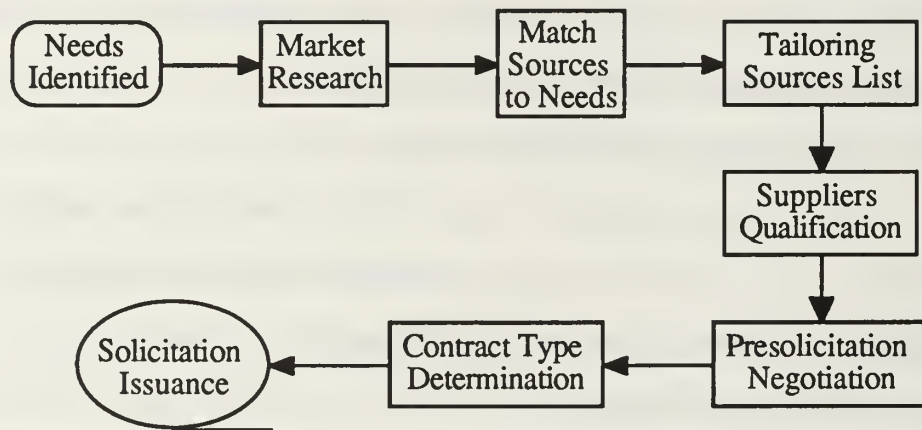


Fig. 5 Private Sector Supplier Sourcing Process

The administration or complexity associated with each step in the supplier sourcing process may differ from company to company because of the circumstance/company/market. For example, the most sophisticated companies tend to have elaborate supplier assessment schemes. These frequently include quality audits, facility audits and careful financial appraisals along with a management audit, and are undertaken by a technical/commercial team. Smaller businesses, without the same level of resources, may use a simple check list approach which reminds the buyer concerned of the information he should obtain about the potential supplier. However, the details of each step presented below reflect the full range of

choices a prudent purchasing head should consider in the supplier sourcing process.

1. Needs Identified

The identification of customer needs start the procurement process. Where the requirements originate from and how they are described are the two issues discussed below.

a. Origins of requirements

The need for a purchase typically originates from one of a firm's operating departments or from its inventory control section. Some companies route all requisitions for stores-type items such as tools, supplies, and production-type materials to an inventory control section for a stock check before they are sent to the purchasing department. This expedites the supply process and eliminates the administrative time in the purchasing department.

The purchase requisition is an internal document, in contrast with the purchase order which is basically an external document. Transmission of the need to the purchasing department is usually accomplished by one of four forms: (1) a standard purchase requisition, (2) a traveling purchase requisition, (3) a bill of materials, or (4) a material requirements planning (MRP) schedule. The standard purchase requisition form for requests originates in the operating department for non-stock items, in contrast with the traveling purchase requisition form which originates in the inventory control section for stock items. When a design engineer completes the design of a part or an assembly, the designer makes a list of all materials (and quantity of each) required for manufacturing the item. This

special structured list is called a bill of materials and is usually sent along with the engineering drawing and production schedule. The MRP is then obtained by extending the bill of materials for the production quantity scheduled.

b. Purchase Descriptions

Whether or not a contract will be performed to the satisfaction of the buyer frequently is determined at the time the purchase description is selected or written. An important point to be understood here is that clear, complete, appropriate definition and description is a joint responsibility of the user and the buyer.

Private sector purchase descriptions fall into two broad categories: detailed specifications and other purchase descriptions.

(1) Detailed Specifications

Detailed specifications are the most detailed method used to describe a customer's requirements. Optimum specifications are generated through the cooperation of engineering, operations, purchasing, and quality departments. There are three principal types of detailed specifications: commercial standards, design specifications (generally accompanied by engineering drawings), and material and method-of-manufacture specifications. [Ref. 3:pp. 128-131]

(2) Other Purchase Descriptions

Detailed specifications are very restrictive and may not be desirable. If this is the case, other types of purchase descriptions can be used. Common types of purchase descriptions include: performance specifications, brand name or equal, use of samples, market standard classifications for commodities, and pre-qualified products. If a single type of description does

not adequately described a product, a combination of two or more types should be used. [Ref. 7:pp. 131-136]

2. Market Research

The ability to locate quality sources of supply is a primary prerequisite for any successful purchasing director. Some purchasing officials still rely solely upon their experience and memory when attempting to locate sources of supply. As information technology evolved, office automation made it possible to modernize purchasing practices and computer aided information systems gave the purchasing agent a wider range of choices. A computer aided information system impacts the sourcing process in several ways. The availability of instant and voluminous information makes many decisions in the sourcing process more effective and efficient. But the computerized information system is primarily an internal information source. Hence, the cost effectiveness and efficiency generated by the information system depend on how the system has been managed and maintained.

Buyers who seek business information are, in fact, confronted with an overwhelming number of books, periodicals, newspapers, Government documents, databases, and other sources from which to choose. Usually, the purchasing department will look to exterior assistance for more information in addition to the computer aided information system. The depth of the information research varies with the complexity and criticality of the purchase. The following information sources, which can be utilized in the sourcing process or to support the computer aided information system, are provided:

a. Traditional Information Sources

Traditional information sources include: business guides, directories, bibliographies, almanacs, encyclopedias, and handbooks.

(1) Business guides:

Business guides are bibliographic guides that cover the entire range of business activities. No single guide, however thorough or well written, can possibly serve all needs. The types of business guides can be classified into four basic categories as shown in Figure 6 [Ref. 4:p. 4]. The titles represent the breadth of coverage provided by each type of guide.

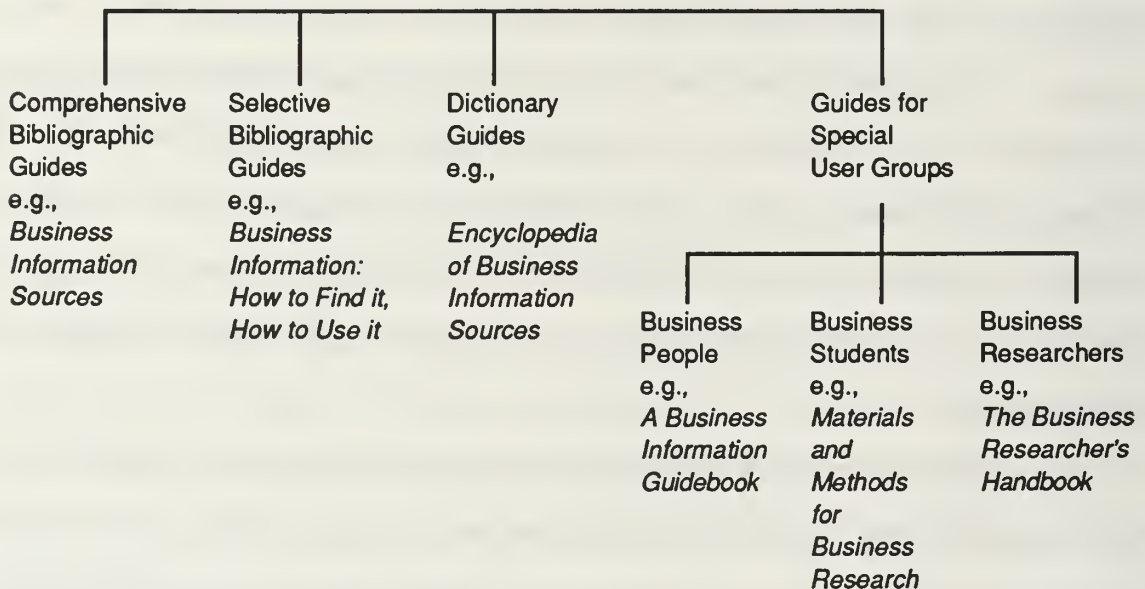


Fig. 6 Types of Business Guides

(2) Directories:

Directories are of prime importance in business. At a minimum, a good business directory will include the names, addresses, and telephone numbers of the companies it lists as well as the names of their chief executives and, often, a phrase or code (e.g. SIC) describing the products

or services offered by each company. Figure 7 shows the number of US business enterprises each standard business directory covers [Ref. 4:p. 21].

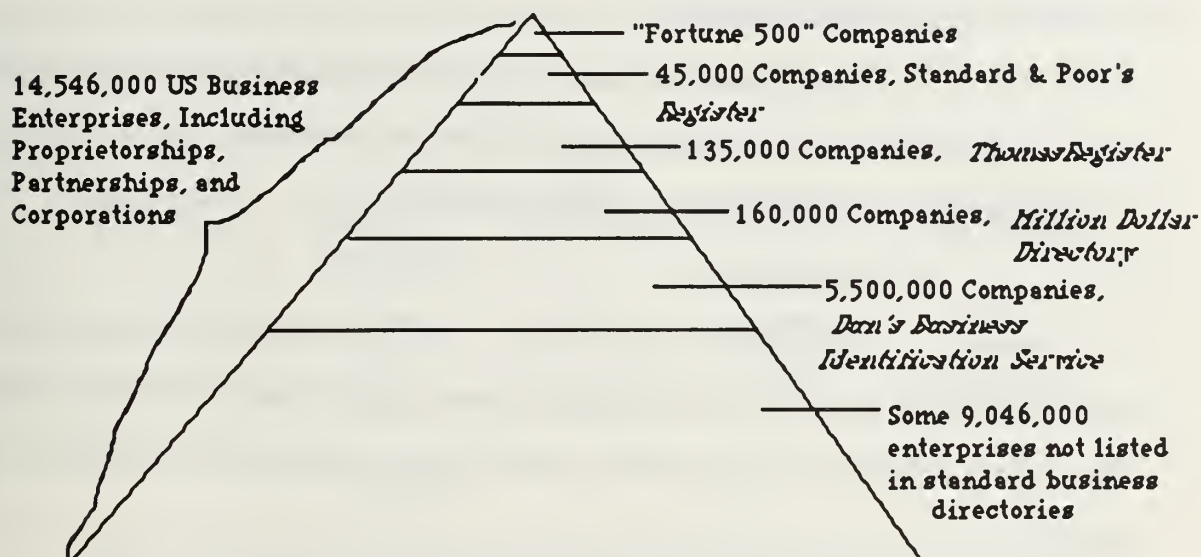


Fig. 7 U.S. Business Enterprises

(3) Bibliographies:

Business bibliographies come in a variety of formats and the buyer needs only to select the most appropriate bibliography. Some present retrospective lists of significant publications in all languages. Others list only the most recent publications, and are limited by country. Some cover relatively narrow fields, such as agribusiness and cost of living, while others include titles for all fields of business.

(4) Almanacs:

Almanacs are essential for locating quick factual information and for identifying the sources in which more detailed or more current information may be found. They may, for example, include summary country information, lists of award and prize winners, demographic and economic statistics, chronologies, and directories. *The Dow*

Jones-Irwin Business and Investment Almanac, for example, is a very useful and basic business reference source.

(5) Encyclopedias:

Some specialized encyclopedias will be helpful for the buyer when they require information in specific fields of business such as banking and financial, accounting system, investments, etc.

(6) Handbooks:

Handbooks are similar to encyclopedias except the handbooks tend to cover fewer topics in greater depth than do encyclopedias. They often require a basic understanding of the subject before reading its contents.

b. Periodicals and Newspaper

Buyers should be familiar with periodicals and newspapers which can provide them with up-to-date information. The world of business is not static; many things happen within one day. The periodicals can be divided into six types, as shown in Figure 8, they are general business, trade, scholarly, consumer, government, and regional periodicals [Ref. 4:p. 46].

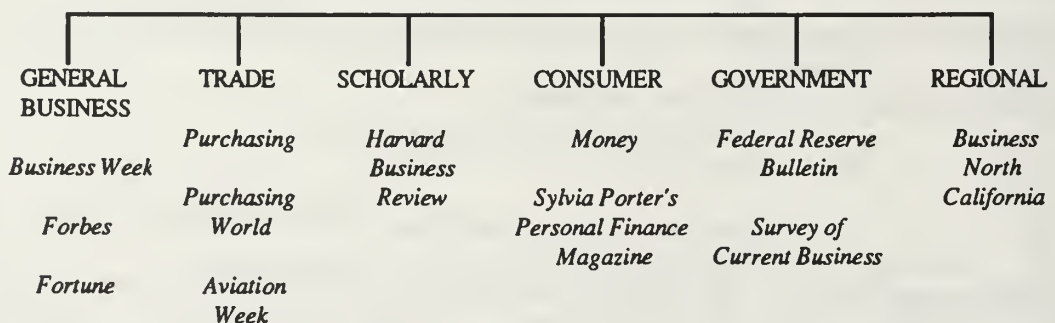


Fig. 8 Types of Business Periodicals

The categories assigned to newspapers are roughly parallel to those for periodicals. They include regular daily newspapers with business sections or pages, and special business and financial, trade, government, and employment opportunity newspapers, as shown in Figure 9 [Ref. 4:p. 59].

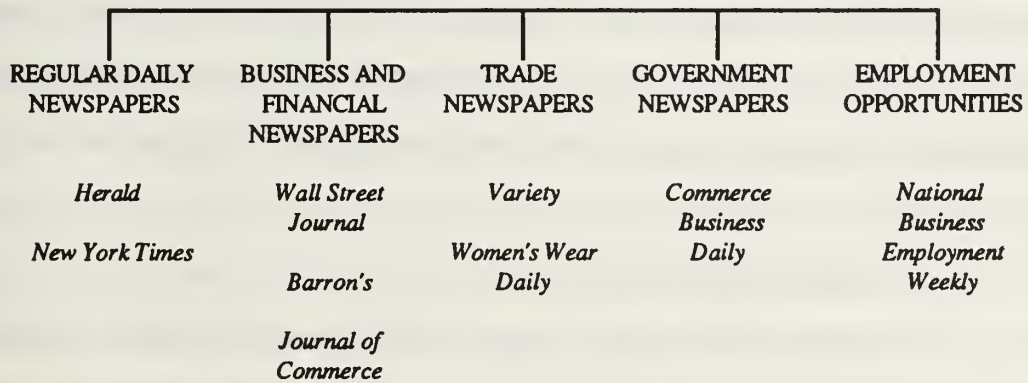


Fig. 9 Types of Newspapers of Interest to the Business Community

c. Looseleaf Services

Looseleaf services provide highly specific and current information in fields of law and business, in fact, they often combine the two. Such information as the most recent amendments to the tax law or recent court decisions regarding dismissal of employees, for example, would be found in the looseleaf publications. Some looseleaf services are available as on-line databases. There are three dominant looseleaf publishers in the business field. They are the Bureau of National Affairs (BNA), Commerce Clearing House (CCH), and Prentice-Hall (P-H).

d. Government Information and Services

International, foreign, federal, and local government supported information and services are excellent sources of information because of their diversity and broad scope.

The Federal Government, for example, is widely acknowledged to be the world's largest gatherer and publisher of information. It publishes guides, bibliographies, and periodicals for the public. There are literally hundreds of special programs and services available to business, ranging from counseling to special loans. It is the buyer's responsibility to stay abreast of changes in their own field and to familiarize themselves with related fields, especially during transitions from one Government administration to the next.

e. Catalogs and Pamphlets

To efficiently use this type of information resource requires the buyer's company to establish a library to manage and maintain the supplier catalogs, pamphlets, and mail advertisements.

f. Electronic Business Information

This type of information has the characteristics of being compact, current, easily manipulated, and possessing unlimited storage capacity. Electronic business information is available in three formats: on-line business databases, laserdisc databases, and compact-disk-read-only-memory (CD-ROM) databases. Because it encompasses all the formats introduced above, its usage has grown tremendously in recent years. The biggest advantage of electronic business information is that it can adapt to the buyer's internal information system; this combination can be used to develop new sources.

3. Matching Sources to Needs

After gathering supplier market information, the buyer's next step is to select the relevant suppliers, according to the requirements, and establish a responsible suppliers list. Responsible suppliers mean that the prospective

suppliers have the potential capability and responsibility to meet the buyer's requirements.

Information obtained from market research may not be sufficient enough to justify that a supplier is responsible. If this is the case, a preliminary survey is required to support such a decision. This survey could be conducted by telephone or through the mail. Needless to say, the foremost concern is whether the supplier will fulfill the buyer's needs. Other questions may cover part or all of the following information: principal officers and their titles, bank references, the production/distribution history for the questioned or similar items, the annual history of sales and profit for the past five years, a referral list of customers, number of employees, space currently occupied, expansion plans (including sources of funds), current defect rate for similar products, the number of inspectors used, the date when statistical process control was adopted, and a list of all equipment and tools which would be used to manufacture, test, and inspect the purchase in question.

4. Tailoring the Source List

The purpose of this step is to shorten the initial list in an effort to trim it to a manageable and economical size. At this step, the buyer should conduct a preliminary supplier evaluation. The function of the preliminary evaluation is to exclude three categories of suppliers from the list.

a. The first category is a list of the suppliers who are also the major suppliers of the buyer's major competitors. This could create a dangerous situation during periods of shortage or recession. Obviously, a buyer should avoid such a situation.

b. The second is a list of the suppliers who are dishonest, suspended, or debarred. These dishonest sellers are those who try to attract the buyers through their "good deals" by telling a false story. If the buyer takes the offer, and many do, the result is always the same: poor quality, high prices, and late delivery. The buyer should also eliminate those sellers who had bad records and are listed on the buyer's suspended or debarred list.

c. The third category contains sellers who engage in a practice known as reciprocity. That is when the buyers give preference to suppliers who are also customers; however, the line between legal or illegal reciprocal practices frequently is very thin. The buyers should be cautious and seek legal advice before they add their customers to the suppliers list.

In addition, the buyer should consider some issues to define the paradigms for the particular purchase request and also to further eliminate irrelevant suppliers from the list. Such considerations include:

- Whether buying locally, nationally, or internationally is more beneficial to the company;
- Whether to buy from a manufacturer or distributor;
- Whether to buy from previous supplier or develop a new supplier;
- What types of supplier's business culture, product mix, and market would best blend with the requirements of buyer's company.

Some procurement executives have attempted to establish formal vendor rating procedures or a rating list as an aid in selecting suppliers. The list is normally based on historical records and performance. The policies and procedures for using the vendor ratings list may vary from company to company, but the results are the same. The buyer uses the vendor rating lists to select the best valued supplier.

5. Supplier Qualification

After generating the prospective supplier list, the buyer's next step is to evaluate each supplier's ability to do the required work. In the case of many uncomplicated, low-dollar-value purchases, an examination of the information already available may be sufficient. But for those complex, high-dollar-value, and critical purchases, additional evaluations may be necessary. These evaluations cover such areas as: the company's financial condition, management control system, technical expertise, plant equipment and capacity. A plant visit may be necessary before a decision is made.

6. Presolicitation Negotiation

Once the initial supplier list is determined, the buyer initiates a series of communications with the suppliers to establish a mutual understanding of the requirements. Only when the supplier fully understands the needs of the buyer and the buyer recognizes the business contexts of the supplier, can a successful purchase be made. This step is to resolve any questions between the buyer and suppliers. For example, the supplier may provide recommendations or substitute items to the buyer pertaining to the requirements. The buyer could modify or change the original requirements.

In this step, the buyer could obtain an approximate price range from each supplier, which can be used to determine the most competitive suppliers. The purchasing agent will negotiate with only the most competitive suppliers.

7. Contract Method Determination

After the final list of most competitive suppliers have been determined, a decision is made whether to use competitive bidding or negotiation (or a combination of the two) as the basis for source selection. Under competitive bidding, industrial buyers generally, but not always, award the contract to the lowest bidder. There are five prerequisites for the use of competitive bidding. They are: [Ref. 3:pp. 204-205]

a. The dollar value of the specific purchase must be large enough to justify the expense, to both buyer and seller, that accompanies this method of source selection and pricing.

b. The specifications of the item or service to be purchased must be explicitly clear to both buyer and seller. In addition, the seller must know from actual previous experience, or be able to estimate accurately from similar past experience, the cost of producing the item or rendering the service.

c. The market must consist of an adequate number of sellers.

d. The sellers comprising the market must be technically qualified and actively want the contract—and, therefore, be willing to price competitively to get it. Frequently criteria 1, 2, and 3 prevail, yet there is no real competition because the sellers are not anxious to bid. Backlogs of work in some sellers' plants may prevent competition. Under such circumstances, additional orders would entail overtime operation and its attendant problems of scheduling difficulties and premium wage payment. If bids are made at all, they are at prices that include numerous contingencies.

e. The time available must be sufficient for using this method of pricing—suppliers competing for large contracts must be allowed time to obtain and evaluate bids from their

subcontractors before they can calculate their best price. Bidders must also have time to perform the necessary cost analysis required within their own organization and to assure themselves of reliable sources of materials. The time required for preparing, mailing, opening, and evaluating bids is usually considerably longer than those unfamiliar with this system would expect. Thirty days is not an uncommon time.

Not only the preceding five prerequisites should be met but also the following four other conditions should not be present when employing competitive bidding as the means of source selection: [Ref. 3:p. 205]

- a. Situations in which it is impossible to estimate costs with a high degree of certainty. Such situations frequently are present with high-technology requirements, with items requiring a long time to develop and produce, and under conditions of economic uncertainty.

- b. Situations in which price is not the only important variable. For example, quality, schedule, and service may well be negotiable variables of equal importance.

- c. Situations in which the purchasing firm anticipates a need to make changes in the specification or some other aspect of the purchase contract. When unscrupulous suppliers anticipate changes, they may "buy-in" with the expectation of "getting well" (and even wealthy) on the resulting changes.

- d. Situations in which special tooling or setup costs are major factors. The allocation of such costs and title to the special tooling are issues best resolved through negotiation.

If these nine conditions are satisfied, then competitive bidding usually will result in the lowest price and is the recommended method of

source selection. Otherwise, the negotiation or other combination methods should be employed. The most typical combination method in use is the "two-step bidding." The two-step bidding technique is also accepted by the FAR. However, two arguments can best illustrate why the negotiation method is favored by many procurement professionals: [Ref. 3:p. 206]

- a. The negotiation process is far more likely to lead to a complete understanding of all issues of the procurement. This improved understanding greatly reduces subsequent quality and schedule problems.

- b. Competitive bidding tends to cause companies to reduce their costs in order to be able to bid a low (but profitable) price. This cost pressure may result in sacrifices in product quality, development efforts, and other vital services.

8. Solicitation Issuance

In this step, the IFB or RFP is sent out by mail or other effective methods to the suppliers on the final solicitation list. The IFB or RFP normally consists of a purchase description of the item or service required, information on quantities, required delivery schedules, special terms and conditions, and standard terms and conditions. If the RFP is used, the buyer should request appropriate cost data in support of the price proposal and the right of access to the supplier's cost records that are required to support the reasonableness of the proposal.

C. SUMMARY

This chapter reviewed the supplier sourcing process promulgated by the Federal Acquisition Regulation and commercial publications. The basic principles that govern the supplier sourcing process are very similar for both

the Government under the FAR and the private sector as outlined in commercial publications. However, the detailed process being followed is different in many ways. The majority of the differences stem from the basic differences between the public sector and the private sector. The public sector must be concerned with the requirements of public law and the implementation of socio-economic programs in the contracting process while the private sector is concerned with maximizing profit. The private sector companies are not encumbered by public laws and other programs which allows them more flexibility in their supplier sourcing process.

III. BACKGROUND: CURRENT PRACTICES IN THE US

The objective of this chapter is to discuss the methods used by three activities in the area of supplier sourcing. These three activities were selected because of their similar missions/functions as the ROCDPD. The three activities are: the U.S. Navy's Ships Parts Control Center (SPCC), Mechanicsburg, PA., the FMS Corporation and Williams & Watts, Inc. (W&W). This chapter will focus on each activities' supplier sourcing process in an effort to compare their methods with the ROCDPD's.

A. SHIPS PARTS CONTROL CENTER (SPCC), MECHANICSBURG, PA.

SPCC, Mechanicsburg was selected for evaluation because its mission is similar to the ROCDPD's. This activity is tasked with managing in excess of five hundred thousand line items of spares parts for use primarily on U.S. Navy ships. These items range from relatively low technology / low price to very high technology / very high price.

SPCC Mechanicsburg follows the procedures outlined in the FAR to execute its supplier sourcing process. Figure 10 depicts the steps followed by a typical purchase request. Each step is discussed below.

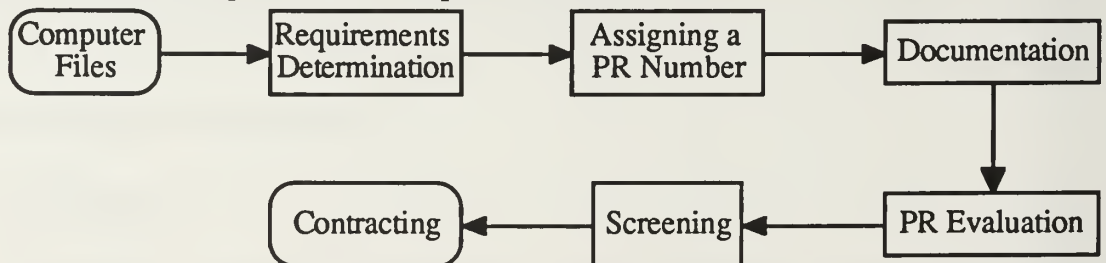


Fig. 10 SPCC PR Flow Diagram

1. Computer Files

Upon receiving a purchase request (PR), a computer file is established. This file is used for tracking and management information purposes. The computer program integrates substantial data and can be accessed by many users. The information includes: ICP managed stock items, PR backlog, contract history, supplier history data.

2. Requirements Determination

The PR is immediately classified as a stock buy or a spot buy. Stock buy PRs are generated as a result of either supply demand reviews (SDR), manual requirements reviews, or the material provisioning process. Spot buy PRs are generated from SPCC's Automated Spot Procurement Program as a result of an immediate need in the supply system. There are two types of spot buys:

a) Not in Stock Items (NIS) -- the item is not available for issue from any stock point.

b) Non-Stocked Item (NSI) -- the item is not maintained in the supply system and is purchased on an as needed basis.

3. Assigning a PR Number

A PR number is a unique number assigned to identify the PR. By assigning a PR number, the PR can be cross-referenced in different files within the Management Information System.

4. Documentation

In this step, many different documents that are required by the FAR and that will assist in the supplier sourcing process are added to the PR file. The names of the documents are not important for purposes of this

discussion. Some documents are uniquely required by SPCC for the PR. The documentations are also supported by the computer program and files. The documents include: purchase worksheet (NAVSUP Form 1275), RFQ (SF-18), continuation sheet (SF-36), technical breakout retrieval, combination sheet (combo list), "Buy Me" sheet, and justification and approval form. The preparation of these documents start during this step. Some of these documents are continually updated throughout the procurement process.

5. PR Evaluation

In this step, a PR may be subject to more than one type of evaluation depending on the nature of the requirement. The different types of evaluations are:

a. Limited Screening

This type of review determines whether an item that was previously procured on a "sole-source" basis can be purchased competitively.

b. Packaging Requirement

This evaluation determines the packaging requirements for a particular item.

c. Technical Review

The technical review is one of the most important steps in the PR process. The technical review is necessary to either:

- Identify the item to a National Stock Number
- Establish procurement specifications

The technical review generates two primary documents that are included in the PR folder. The first is the Procurement Specification and Document Reference Sheet which lists the required technical data needed to

manufacture the item. The second is the Purchase Recommendation Sheet which provides the suggested sources of supply.

The SPCC Technical Library provides technical data which includes: engineering drawings, Qualified Products List (QPL), specifications, technical manuals, standards, and commercial catalogs.

6. Screening

In this step, a buyer reviews the PR folder for completeness. The buyer will either begin processing the PR or will issue a referral for more information because the screening revealed that the PR contained insufficient data to make the buy.

Upon completion of this step, SPCC Mechanicsburg conducts the supplier sourcing process described in Chapter II Section A of this thesis.

B. FMS CORPORATION

FMS Corporation is located in Los Angeles, California. It is a privately held company started in 1981 with sales of over \$62M in 1990. FMS Corporation is a service company who specializes in purchasing, inspecting, packaging, and delivery of items for their customers. About ninety percent of their efforts go towards the purchase function, five percent towards their technical and engineering support function, and the other five percent towards production of unique items.

FMS Corporation got its start in Foreign Military Sales. Originally, they were under subcontract to procure parts for major Department of Defense (DoD) prime contractor's that were engaged in the sale of military items to foreign countries. Subsequent to this arrangement, FMS has in some cases been engaged as a buying agent for US manufactured subcontract items for

foreign companies. Today, FMS is doing business in three major areas: providing spare parts for US Navy ships, parts and tools for the US Army, and sales to foreign countries. Each area contributes approximately one third of the total company sales.

FMS's forte is automated hands off purchasing. Their competitive edge rests on the software they have developed which is designed to maximize automation and minimize actual 'hands on' review. While not all requirements will follow the same path through the company's system, the basic supplier sourcing process within FMS is depicted in Figure 11.

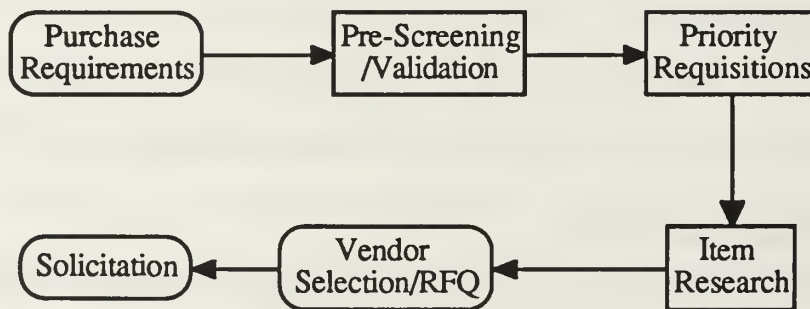


Fig. 11 Supplier Sourcing Process Within the FMS Co.

1. Purchase Requirements

Purchase requirements can be received by FMS in either hard or soft copy (electronically). FMS receives purchase requirements through the electronic transfer of MILSTRIP (military standard requisitioning procedure) documents and narrative records via the AUTODIN (automatic digital network) system. Initially, this data is received and stored in transaction files within the Personal Computer (PC) dedicated to front end processing. If necessary, the operator will contact the cognizant DAASO (Defense Automatic Addressing System Office) representative to arrange for a re-transmittal of data. The data is uploaded to FMS' mainframe computer and

transferred to a Project Control File (PCF). The purposes of the PCF is to facilitate the performance measuring and data processing. The PCF will contain all of the information from the MILSTRIP record including but not limited to:

- a. Document Identifier
- b. Routing Identifier
- c. CAGE (contractor and government entity) Code
- d. Part Number (P/N)
- e. National Stock Number (NSN)
- f. National Item Identification Number
- g. Unit of Issue
- h. Quantity
- i. Document Number
- j. Address Data
- k. Document Date
- l. Serial Number
- m. Priority
- n. Advice Code
- o. Unit Price

2. Pre-Screening/Validation

The initial screening of all requisitions will check for discrepancies between the NSN or P/N, unit of issue, and quantity. These fields from the MILSTRIP requisition are validated against FMS' database information and potential problems are identified and highlighted.

A second screening will check for selected "special" items that require particular attention as identified by their contract with their customer. The computer will screen NSN requisitions to check for "special" items such as Ammunition, Classified items, and Hazardous Material. If any of the

"special items" are detected, the requisition will be transferred to the department responsible for its procurement within the company.

A third screening searches for "duplicate" and or "identical" items already on order for any other FMS project. The identified item will be flagged for additional manual review or automatically combined with the other order quantity.

3. Priority Requisitions

A second set of reports produced during the initial screening phase identifies priority or critical requisitions as specified by the customer contract. These requisitions are normally considered critical because they are urgently required and will be excluded from the company's normal procurement process. If the priority item is not on order for any other program, the vendor selection will be performed manually and those items will be subject to verbal expedited solicitation procedures. Potential vendors will be alerted to the fact that this is a critical requisition that requires immediate quotation, award and delivery.

4. Item Research

Prior to the vendor selection phase, FMS will review each requirement to determine if the item is managed by DoD. In the case of a NSN requisition, FMS has developed a software screening procedure to perform screens against other NSN requirements to identify and cross reference "equivalent," "superseding" or "replacing" NSN's. FMS maintains logistics data from the Government's Consolidated Management List (ML-C) and uses pertinent data such as Acquisition Advice Codes (AAC) and Source of Supply (SOS) Codes to conduct their analysis. If it is discovered that the

item is managed by DoD, the requisition will be rejected and coded for DoD action.

The review process for part numbered (P/N) requisitions is much more difficult. The first step in this process is an attempt to cross-reference the P/N's to NSN's. FMS' system provides an on-line, real-time access to over 12 million vendor unique P/N's that cross-reference to over 8 million NSNs. As a result of this review, any P/N cross-referenced to a NSN that is managed by DoD will be rejected from the automated system and coded for DoD action. Items that do not immediately cross to a NSN will be moved forward in the process to the next step.

5. Vendor Selection/Request for Quotation

After completion of the pre-screening and item research phase, the remaining items are then subject to vendor selection. This process is accomplished through a search of the integrated database that reviews information from the Master Cross-Reference List (MCRL), Consolidated Management List (ML-C), US Government Procurement History (PH) and FMS' own Procurement History (PHMT). Any pertinent information generated in this process will be added to the PCF. As each potential source of supply is identified, they are assigned a numerical ranking (1-100). This numerical ranking is the result of a sophisticated computer algorithm that projects the likelihood of a vendor's ability to deliver the item in question. The next step is to select the number of vendors who will receive a Request For Quotation. For example, FMS can select the "Top 3" vendors for each line item based on their numerical ranking.

Items that are not matched with vendors by the automated process will be subject to further vendor selection analysis techniques that take advantage of computer assisted tools which are integrated in the database. If an item continues to be categorized as "unsourced" or "vendorless," FMS will assign the items to a special group of specialists within the project department. This group will review each item on an individual basis and attempt to locate a source of supply. Finally, if all else fails and a source cannot be established, FMS will cancel the requisition.

After the vendor selection process is complete, the next step is the assignment of Quality Assurance Requirements (QAR's) to each individual line item. This is a semi-automated process. In the absence of technical documentation (drawings, technical orders, etc.) items will automatically be assigned to a set of "default" QAR's such as the minimum requirements needed to comply with FAR 52.246 "Inspection of Supplies."

If technical documentation is available, it is the responsibility of Quality Engineering to review the documentation and assign supplemental QAR's on a case-by-case basis. These data are entered into the computer and become a permanent part of the item's record.

Whenever possible, FMS will attempt to maximize the number of line items on a single RFQ. This not only provides for internal efficiency but also helps to make the RFQ more attractive to prospective vendors. Further, by bidding on a number of items at one time, there is a greater chance of receiving price breaks while at the same time helping to eliminate minimum purchase order dollar/quantity restrictions.

6. Solicitation

Under normal circumstances, FMS mails their RFQ's to appropriate vendors and awaits their written offer. However, changes to the normal procedures are used on a case-by-case basis when the need arises. Examples of these changes include procedures such as the use of "FAX-RFQs" and verbal offers (to be followed up with written vendor confirmations).

C. WILLIAMS AND WATTS INC. (W&W)

W&W is a privately held company under sole ownership located in Fairfield, New Jersey, with sales in excess of \$48M in 1990. The company got its start supplying repair parts to private shipyards conducting overhauls of US Navy ships. Eventually the company proved its expertise in this area and began to receive contracts to purchase, receive, inspect, and deliver entire On Board Repair Parts (OBRP) packages for the construction and overhaul of naval ships.

They also received a contract from the Naval Supply Systems Command (NAVSUP) to procure a variety of part numbered items valued at under \$25,000 for the SPCC Mechanicsburg in 1987. Williams and Watts specializes in what could be classified as 'hard to get' items that require extensive research. In some cases, W&W will locate a 'job shop' to manufacture the item. W&W developed an Expert Sourcing System (ESS) used to establish and find sources. W&W's ESS automated the pre-solicitation technical reviews, QA analysis, and bidder selection process. W&W also claims that their trainees are thoroughly trained in the technical details before becoming a buyer. This according to W&W is called the "Techno-Buyer" approach. Their supplier sourcing process is simply depicted in Figure 12.



Fig. 12 Supplier Sourcing Process for W&W Inc.

1. Purchase Requirements

The methods by which purchase requirements are received by W&W are similar to FMS. W&W will also translate a hard copy of a purchase requirement into computer data files to expedite the automated processing.

2. Expert Sourcing System (ESS)

The ESS developed by W&W integrates eight rules into the system to expedite the supplier sourcing process. By applying these rules, the ESS directs a specific purchase requirement to a group of selected suppliers. W&W contracts with a commercial contractor to provide the database management services. The ESS uses information from Government's databases and the subcontractor's already extensive database. The eight rules used by the ESS for decision making are:

a. Source Control

This step automatically tries to identify the requested item to a Source Control Drawing. If it is successful, the database is then capable of providing qualified sources for the item. If the system cannot identify the item, it is rejected and forwarded for technical evaluation.

b. Qualified Product Lists (QPL)

If a QPL exists for the requested item, W&W will solicit only those sources on it. Both part numbers and the specifications must match the

item on the QPL before the system will automatically solicit the companies on the QPL.

c. Government Drawings and Authorized Manufacturers

Directs solicitations to authorized manufacturers, which mean Government-approved suppliers who manufacture in accordance with Government drawings, including Military Standard (MS) drawings.

d. Commercial P/N Distributors

Directs solicitations to Government-approved suppliers who are the appropriate distributors for a given manufacturer.

e. P/N Prefix

Works with either Military or Commercial references to automatically de-code "intelligent numbers", and prepare solicitations to the right sources.

f. Government CAGE and Government Pricing History (GPH)

Solicits a source who supplied the item to the Government previously. A Military Federal P/N is the identifier for the item to be solicited.

g. Commercial P/N and GPH

Solicits a source using GPH records in conjunction with a commercial P/N and Federal Supply Code of Manufacturers (FSCM) from the Defense Logistic Supply Center's Total Item Records.

h. RNCC 3 or 5, Variation 2

The supplier solicited is the design controller according to the Defense Logistic Supply Center's Total Item Record.

3. Soliciting Sources

In addition to the sources contained in the ESS, W&W attempts to maximize competition where possible and to purchase from the actual manufacturer. If any automated Government data indicate that there are other valid competitors, W&W will determine whether to add them to the bidder's list. And if no data is known until Receipt Inspection, it's captured and used then to lower all future buys' costs.

D. SUMMARY

This chapter reviewed the supplier sourcing systems used by three different activities, one Government buying command and two private sector companies who specialize in providing repair parts and material for the Government. All three activities used an automated data processing system to assist them in the supplier sourcing process. The two private sector companies appeared to have developed very efficient systems which used the information already contained in Government databases.

The next chapter will discuss in depth, the Republic of China Defense Procurement Division's supplier sourcing process.

IV. REPUBLIC OF CHINA DEFENSE PROCUREMENT DIVISION (ROCDPD)

This chapter will present a comprehensive discussion on the organization and daily operations of the ROCDPD. The position of the ROCDPD in the US defense material sales and the legality of that position will also be explored.

A. BACKGROUND

The ROCDPD is the office conducting foreign defense acquisition for the Republic of China in the US. According to data originated from the Fiscal Year 1991 Annual Congressional Presentation for Security Assistance Programs, the ROCDPD had actual total arms procurements through Foreign Military Sales (FMS) and Commercial Procurements (CP) amounting to \$611M for FY 1989, expecting \$660M for FY 1990, and expecting \$640M for FY 1991 [Ref. 5:pp. 43-48]. The ROC is the third largest buying country on the FMS list, in terms of estimated FY 1991 sales, following Switzerland and Saudi Arabia. In CP, the ROC is the tenth largest buying country for FY 1991, following Japan, Germany, Australia, Korea, Greece, Italy, French Guiana, Belgium, and France.

The annual purchase amounts from FY 1987-FY 1990 are shown in Table 1 (excluding the special mission purchases). This data revealed a compound growth rate of 32.64% annually. It also implies that the ROC's requirements are gradually shifting from major system procurements to routine maintenance of spares or repair parts. Accordingly, the importance of

managing these routine procurements is increasing. This trend serves to emphasize the timeliness and potential benefits of this research.

TABLE 1*

Fiscal Year	Routine Transaction
FY** 87	120 M***
FY** 88	160 M***
FY** 89	250 M***
FY** 90	280 M***
Compound Growth rate/yr	32.64%

* **Data Source: ROCDPD**

** **FY of the ROC starts from July 1 and ends at June 30.**

*** **Amount includes only the routine activities of Foreign Military Procurement and Commercial Procurement.**

According to the Commission on Government Procurement (COGP) model, the most widely recognized model, the Federal procurement process is divided into seven sequential stages. [Ref. 6:p. 100 and 216]

1. Identifying the perception of needs and their funding
2. Procurement planning
3. Solicitation
4. Source selection
5. Negotiation
6. Contract award
7. Contract administration

The Federal acquisition system is supported by a complicated network of organizations; this system provides the right products or services at the right time and the right place through contractual vehicles. Under such complex circumstances, each of the seven stages above is equally important for the

success of a procurement. Because foreign purchasing organizations, generally operate within an information-impaired atmosphere, identifying potential suppliers would be a more critical factor in the contracting process than for US organizations.

Identifying potential suppliers (from here on referred to as sourcing) is a prerequisite for source selection. Sourcing involves not only recognizing potential suppliers but also developing them. In order to maximize the efficiency of the sourcing process, techniques that improve the market research process and computer-aided techniques to support the retained database of suppliers is necessary. The ROCDPD is organized to support the needs of the ROC armed forces for supplies and services from the United States. This chapter will outline how the ROCDPD is organized, the environment in which it operates and the current procurement process.

B. THE PROCUREMENT ENVIRONMENT

Two documents have significant impact on the US arms sales to the ROC. They are the Taiwan Relations Act (TRA), effective January 1, 1979, Public Law 96-8-APR. 10, and the Joint Communiqué issued by the United States and the PROC on August 17, 1982.

1. Taiwan Relations Act (TRA)

The TRA states in Section 2 (b) that "It is the policy of the United States--;. . . (5) to provide Taiwan with arms of a defense character;. . . ". Further, Section 3 (a) stipulates that ". . . the United States will make available to Taiwan such defense articles and defense services in such quantity as may be necessary to enable Taiwan to maintain a sufficient self-defense capability. . . (b) The President and Congress shall determine the nature and quantity of

such defense articles and services based solely upon their judgement of the needs of Taiwan. . . Such determination of Taiwan's defense needs shall include review by United States military authorities in connection with recommendations to the President and the Congress." The statute mandates a continued US role in supplying Taiwan with defensive weapons after the expiration of the security treaty. It also stipulates that these sales must be "sufficient" to meet future self-defense needs, including modernization requirements. However, because the statute states that the needs of Taiwan are based solely upon the judgement of the President and Congress of the United States, interpretations of the "needs" have varied from administration to administration. Many examples in the past contradict the spirit of TRA [Ref. 7:pp. 23-39]. Despite past conflicts, it is this researcher's belief that the massacre at Tiananmen Square and the impending Hong Kong take-over will bring a more realistic assessment of the PROC to the US. Though the nature of arms sales may vary, the continued supply of arms from the US to the ROC is expected.

Section 6 (a) states that "Programs, transactions, and other relations conducted or carried out by the President or any agency of the United States Government with respect to Taiwan shall, in the manner and to the extent directed by the President, be conducted and carried out by or through--(1) The American Institute in Taiwan,. . . ". Therefore, FMS and CP are conducted through and by the American Institute in Taiwan (AIT).

2. The Joint Communiqué

The effects of the Joint Communiqué are clearly illustrated by an article in The New York Times, dated August 18, 1982:

Having in mind the foregoing statements of both sides, the United States government states that it does not seek to carry out a long-term policy of arms sales to Taiwan, that its arms sales to Taiwan will not exceed, either in qualitative or in quantitative terms, the level of those supplied in recent years since the establishment of diplomatic relations between the United States and China, and that it intends to reduce gradually its sales of arms to Taiwan, leading over a period of time to a final resolution.

Washington and Peking's interpretations of "final resolution" are quite different. Among the six assurances that Washington gave Taipei on July 14, 1982, the first states that the US, "Has not agreed to set a date for ending arms sales to the ROC". To Peking, the term "final resolution" certainly implied that US arms sales to Taiwan must be completely terminated over a period of time. The limits imposed by the Communiqué on arms sales to the ROC were unnecessary and detrimental to Taiwan's security. A gradual reduction (\$20M per year) in the supply of arms from the US will jeopardize the ROC's national defense in the long run [Ref. 7:p. 48]. In March 1983, the Administration revealed that for purposes of complying with the Communiqué provisions, FY 1983 arms sales to the ROC would amount to \$800M, and drop to \$780M in FY 1984. This is how the current \$640M level was reached for FY 1991.

3. The Acquisition Operation Procedure Manual (AOPM) and Defense Acquisition Regulation (DAR)

The ROCDPD is primarily governed under two regulations: the ROCDPD Acquisition Operation Procedure Manual (AOPM) and the ROC Defense Acquisition Regulation (DAR). The DAR mandated the use of only

two types of contracts: the Firm Fixed Price (FFP) contract and the Firm Fixed Price with Economic Adjustment contract (FPE). The DAR also requires the use of sealed bidding techniques for source selection.

The mission of the ROCDPD is affected by complex political, legal, and cultural relationships, which pose tremendous challenges for the ROCDPD management to balance.

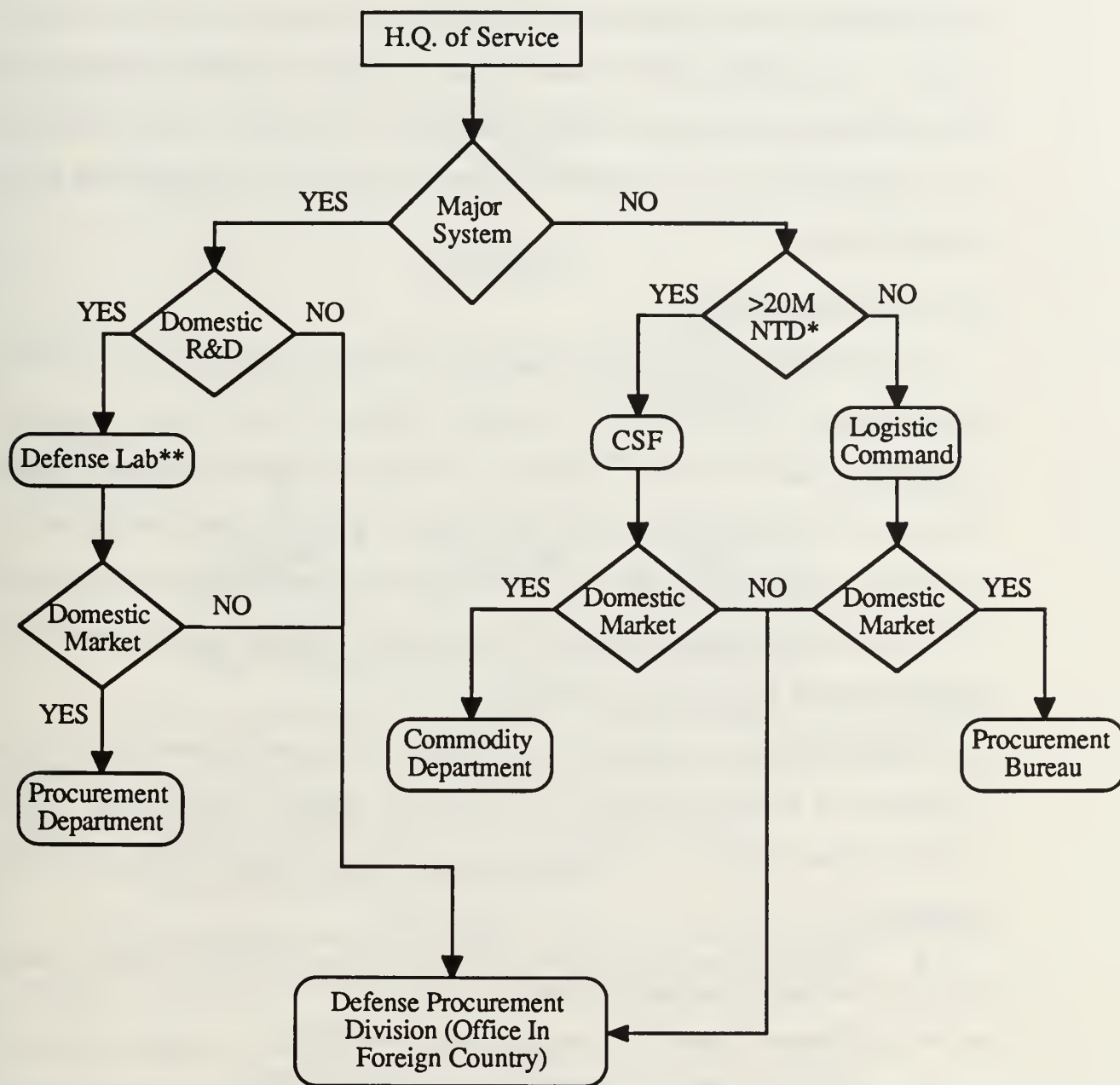
C. SOURCES OF REQUIREMENT

Requirements may come from various Republic of China logistic commands, which include the: Navy, Air Force, Army, Combined Service Forces (similar to the US Defense Logistic Agency), and the Chung Shan Institute of Science and Technology (CSIST is the primary military research and development organization in the ROC). Figure 13 identifies the sources of requirements for the ROCDPD [Ref. 1:p. 13].

During interviews with officials in the ROCDPD planning division (PD), it was revealed that almost ninety nine percent of all requirements received contain the following minimum information: National Stock Number (NSN) and/or part number, item nomenclature, and quantity. No statistical data were available to support this claim. These data indicate that most of the requirements coming from the ROC are for spares and repair parts.

Normally, the requirees specify the items to be purchased through the CP or FMS/FMP. (It should be noted that FMS refers to foreign military sales from the US perspective; but the ROC, as recipients of FMS, refers to FMS as Foreign Military Procurement, or FMP, which will be used hereafter in this thesis.) These requirements are based on past experience and existing

information. Thus, many items that cannot be acquired by the FMP will ultimately return to the ROCDPD for procurement by the CP area.



* Currency of New Taiwan Dollar.

** Primarily CSIST.

Fig. 13 Requirement Sources of the ROCDPD

The extremely old age of the equipment to be supported is the primary reason why the ROCDPD fails to procure these items. Numerous out-dated or no-longer-produced spares and repair parts are required by the ROC armed forces. It is apparent that identification of needs and their funding, and procurement planning are the responsibilities of requirees. The ROCDPD is not responsible for the acquisition planning, funding or identification of the requirement.

D. ORGANIZATIONS

The ROCDPD is physically located within the organization of the ROC Coordination Council for North American Affairs (CCNAA) but is under the command chain of the ROC Ministry of National Defense (MND), reporting directly to the deputy director of the Office of Logistics. The organizational structure is depicted in Figure 14. The Director of the ROCDPD is responsible for all matters relating to FMP, CP, and special mission assignments in the North America area (Canada and US).

The ROCDPD is supported by 6 divisions that provide assistance in three categories of activities (FMP, CP, and special mission assignments). Other officials report directly or indirectly to the Director of the ROCDPD, including:

[Ref. 8:p. 1]

- Deputy Director of the ROCDPD (also acts as division head of Staff & Administration Division);
- Division Head of Planning Department (PD);
- Division Head of Contracting Department (CD);
- Division Head of Contract Administration Department (CAD);
- Division Head of FMP Department (FMPD);
- Heads of Mission Detachment (MD);

- Transportation officers (TOs);
- Navy and Air Force logistic liaisons.

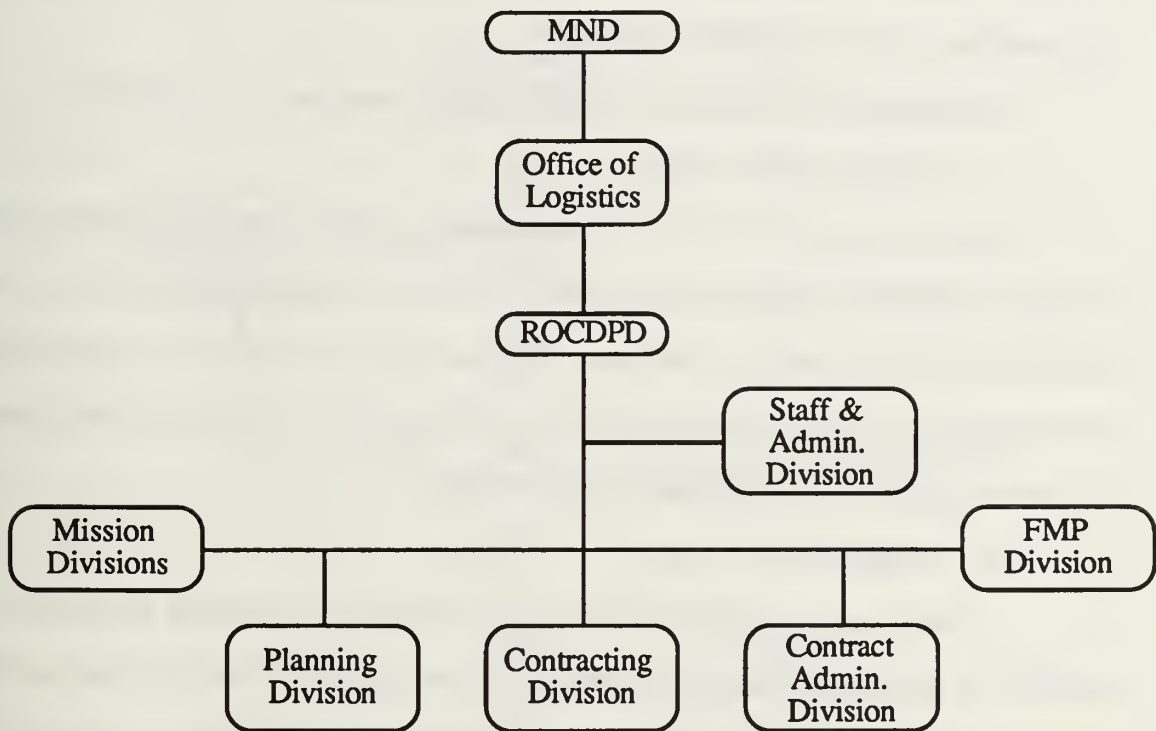


Fig. 14 Organizational Structure of the ROCDPD

To obtain a comprehensive insight and understanding of the ROCDPD's organization, this researcher observed its day-to-day activities for five days. These activities are categorized into three functional areas:

1. Foreign Military Procurement (FMP)

FMP encompasses purchases for which the ROCDPD deals with the US DoD or the Department of State through the FMS channel. The primary division within the ROCDPD that is responsible for the administration and implementation of the FMP is the FMPD.

The principal guidelines for the FMPD are contained in DoD 5150.38-M, Security Assistance Management Manual (SAMM) as well as the ROCDPD

AOPM. Most of the personnel within the FMPD are supply officers from all of the ROC services. FMP cases and personnel are allocated according to the requirements of the respective services.

Three types of cases are currently being managed by the FMPD:

a. Defined Order Cases:

This is a case in which the end-item is offered as a parentage item and each additional deliverable article or service is separately defined and priced as a sub-line item in the Letter Of Acceptance (LOA, DoD Form 1513). For instance, in a ship procurement, the ship is the end-item; spares, parts, and other ship support items are sub-line items.

b. Blanket Order Cases:

In this case, the ROCDPD may set orders for specified categories of materials or services up to the price ceiling designated in the LOA during the ordering period of the case. There is no clear-cut listing of items or quantities. In general, most blanket order cases are for follow-on support materials or services.

c. Cooperative Logistic Supply Support Arrangements (CLSSAs):

The ROCDPD is authorized to extract follow-on spares and repair parts from US stocks during peacetime. CLSSAs are achieved through FMS Orders (FMSOs) covering stockage, consumption, and storage for an agreed period.

Most of the cases, in terms of case quantity, are for non-major system acquisitions. The same definition used for "major system" in the US DoD is valid in the FMPD [Ref. 2:p. 34-1]. The process for non-major FMS cases .

characterizes the routine procedures of the FMPD. The operational flow chart in Figure 15 outlines the process.

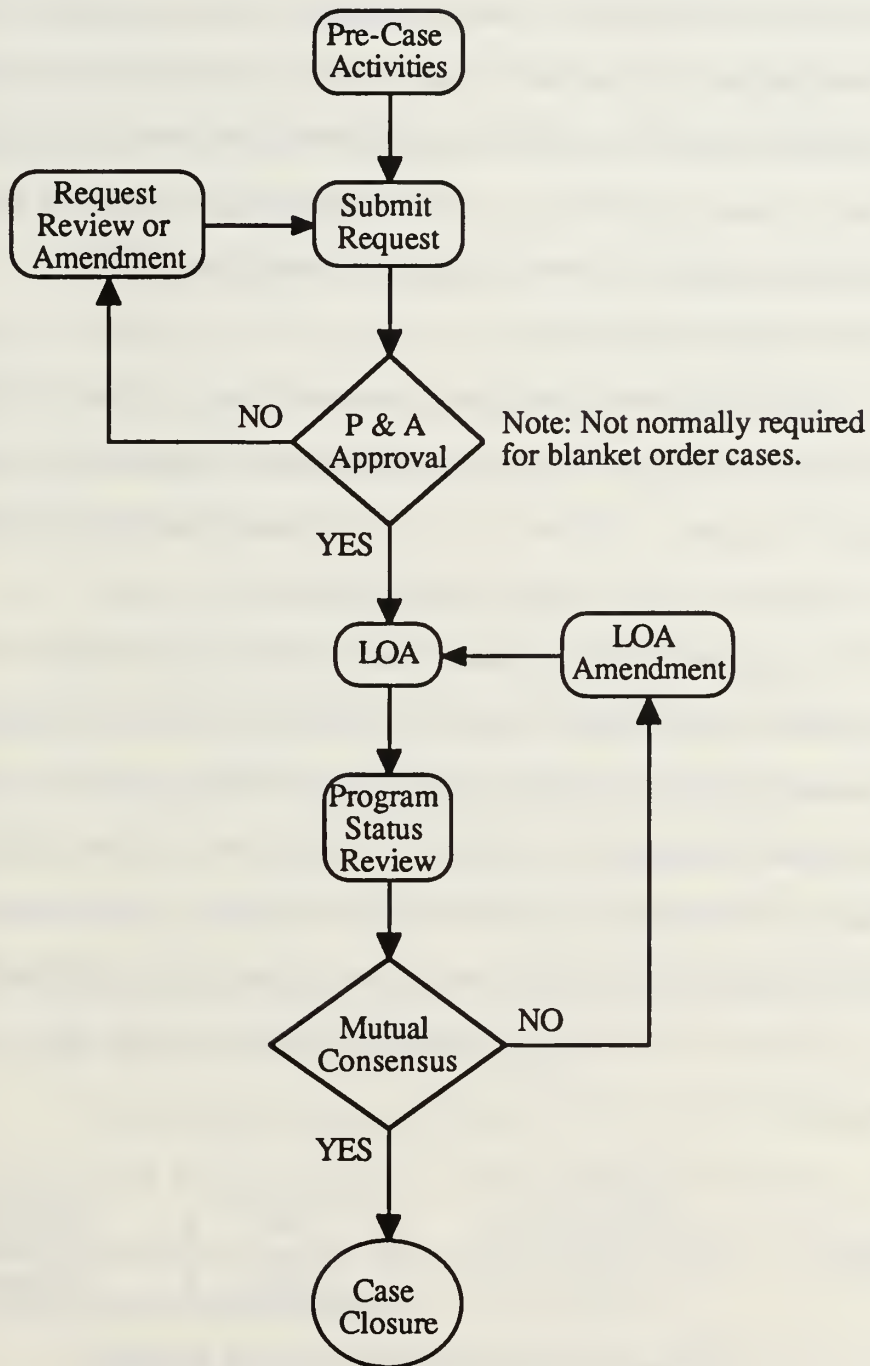


Fig. 15 Process of the FMP Cases

a. Pre-Case Activities

After receiving domestic requirements, some activities need to be performed before making a formal request. Pre-case negotiations and informal exchange of information are typical activities during this stage. Other major activities such as licensing, co-production, and offset agreements between the US and the ROC are conducted under the terms of memoranda of understanding (MOU) and memoranda of acceptance (MOA).

b. Submit Request

There are two categories of requests sent out from the ROCDPD: 1) requests for planning and review (P&R) data and 2) requests for price and availability (P&A) data. Subject to the attributes of the requested items, the request is required to specify either P&R or P&A.

Requests should contain the quantity and configuration of the items requested, usage plan, plan for maintenance and integrated supply support, resource constraints, and financing assistance. The ROC is an eligible recipient under category B, defined as those who must submit to the Department of State for approval in the SAMM. The current, formal submission process for Defense material requirements is depicted in Figure 16. This process is subjected to interpretations of the TRA by the US Government.



Fig. 16 Requirements Submission Process

c. Price and Availability (P&A) Approval

The P&A approval is conducted by the US Government and must be a complete and precise analysis of the ROCDPD's request. The P&A estimate for a FMS case is a coordinated effort within the US Government. If any changes to the FMS case request are required of the ROCDPD, it is usually initiated by a US representative.

The P&A approval is required before a Letter of Agreement can be prepared. Because the LOA is the foundation of the potential contractual agreement between the US Government and the ROC Government, P&A activities could range from price analysis, to system support, to initial support, and to site surveys.

d. Letter of Agreement

The LOA is the basic contract between the US and ROC Governments. After receiving the LOA, the ROCDPD transfers it back to the requiree for re-evaluation. Requests for amendment of the LOA are based on the outcomes of the re-evaluation and the findings of the program status review. In Navy cases, the US Navy would use their own funds to pay the contractor, presuming that they would be reimbursed by the ROCDPD under a normal "payment within 120 days" agreement.

If the requiree agrees with the LOA, the ROCDPD forwards the signed LOA plus initial payment to the Security Assistance Accounting Center (SACC).

e. Program Status Review

Program status reviews are held throughout the lifetime of a FMS case. The purpose of the reviews is to identify any problems and to

discuss proposed changes to the FMS case. If any problems are identified for resolution, action items are assigned to cognizant activities. The Program Status review conferences are convened periodically either in the US or in the ROC with ROC experts or US agent managers. It is advantageous to obtain a mutual consensus and the current overall program status.

f. Mutual Consensus

If a consensus cannot be obtained from the program status review, or if other contingencies occur, a LOA amendment may be required. Depending on the magnitude and the impact of the changes, the amendment can either be issued directly by the cognizant US contracting officer (CO) and attached to the original LOA, or can be incorporated into a new LOA.

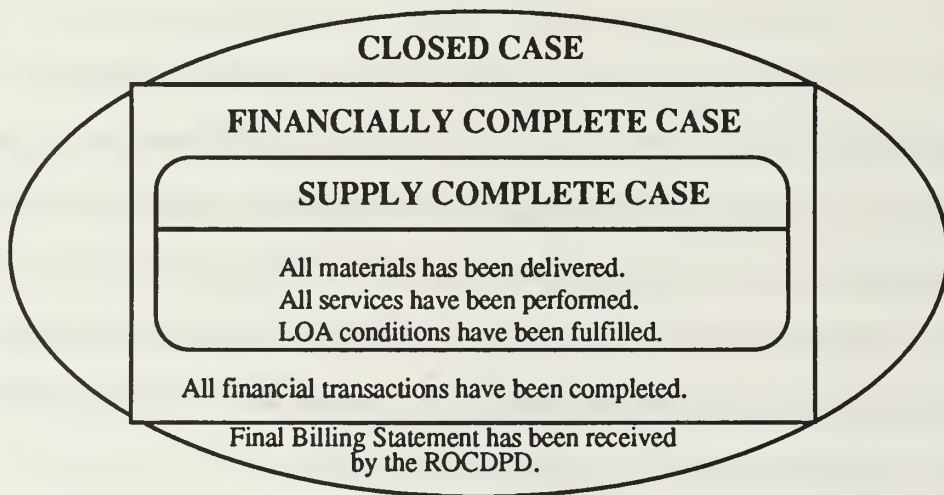


Fig. 17 Levels of FMS Case Closures

g. Case Closure

There are three levels associated with FMS case closures. They are: (1) supply complete cases, (2) financially complete cases, and (3) closed cases. Their relationships are depicted in Figure 17. For those financially complete cases or supply complete cases, the ROCDPD will inform the

requiree of the current case closure level and wait for the Final Billing Statement. For a closed case, the ROCDPD will send the Final Billing Statement back to the requiree and inform the Ministry of National Defense Accounting Center.

2. Commercial Procurement (CP)

Items that are current in the US military supply system can be purchased through FMP procedures. If the items are not available through the FMP procedures, the alternative is to acquire them commercially through the Commercial Procurement area. The CP area is supported by three divisions: the Planning Division, Contracting Division, and Contract Administration Division.

a. Planning Division (PD)

The PD starts the entire commercial procurement process. The PD is responsible for each case upon receipt of the case to the transfer of the case to the CD. The primary function of the PD is to provide the CD with a recommended solicitation list. The functions of the PD include:

- Taking cases from the Staff & Administration Division (S&AD);
- Verifying the case content;
- Making recommendations to the CD on prioritizing the potential contractors and the solicitation list;
- Monitoring the case schedule to case closure;
- Providing price estimate services to requirees;
- Collecting, transforming, and managing business information;
- Evaluating performance of shipping contractors and transportation officers;
- Management of the ROCDPD's Information System;
- Establishing and maintaining a database of US contractors.

In the process of preparing the solicitation list, the PD receives assistance from Dun and Bradstreet (D&B) and a credit business service. This serves as a simple prequalification of selected companies designated by the requiree.

b. Contracting Division (CD)

The CD then takes over the case from the PD and is responsible for the acquisition process from solicitation to contract award. The CP issues solicitations, and performs ceiling price calculations, price and cost analysis, source selection, negotiation, contract drafting, contract award, and any required contract modifications. The functions of the CD include:

- Drafting and disseminating the IFB (Invitation For Bids) and amendments;
- Cost analysis and setting the ceiling price;
- Price analysis;
- Bid openings;
- Evaluating bids;
- Negotiation;
- Drafting and disseminating contracts or purchase orders;
- Reconciliation of funding;
- Drafting and disseminating contract modifications.

Subject to the DAR, the ROCDPD uses the sealed bid procurement system [Ref. 9:pp. 83-120]. While sealed bidding is an effective technique for obtaining price competition and reducing contract administration burden, it can not be used without consideration of all factors associated with the technique. The limitations of the sealed bidding were discussed in Chapter II. The CD acquires assistance in cost or price analysis from the Defense Contract Audit Agency (DCAA) or SPC International, Inc.

(SPCI) for major system procurements. Major system procurement is defined in the CP as a proposed procurement which has an eventual total expenditure exceeding \$10M. The CD also obtains support from legal consultants in drafting contracts for major system procurements.

c. Contract Administration Division (CAD)

The CAD manages the post-award issues related to the signed contract. Its objective is to reach successful contract completion by fulfilling all objectives of the contract agreement. Major activities performed to meet the objectives of the CAD can be divided into four areas: financial administration, shipping arrangement, inspection and acceptance, and resolution of claims. The functions of the CAD include:

- Progress and status monitoring;
- Shipping arrangements and resolution of delay issues;
- Resolution of claims (by the ROCDPD and the Contractor) relating to a contract;
- Export licensing;
- Evaluation of contractor performance;
- Contract closure.

The CAD acts as a coordinator between the ROCDPD and the contractor. CAD personnel maintain close communications with the contractors on issues relating to the four areas identified. The CAD requires strong assistance in the financial and legal fields, and it is supported by the treasury and legal offices within the S&AD. It can also obtain assistance from legal consultants if it is deemed necessary.

3. Special Mission Assignments

Mission assignments are based on the special requirements of the MND. Requirements may be considered "special" based on the dollar value or criticality of the case. The special mission assignments are supported by the mission divisions within the ROCDPD. Currently, there are two MDs who provide procurement support for the ROC Air Force's Indigenous Defensive Fighter (IDF) project. The MDs must work closely with other divisions in the ROCDPD.

D. CP PURCHASING PROCEDURE

Most of the requirements for Commercial Procurement is for spare parts. The most difficult challenge being faced by the CP personnel is associated with the old age of the equipment to be supported and the usually small quantities being requested. A detailed analysis of the processes within the CP area will help to identify potential improvements to accommodate these challenges. Before proceeding, some definitions that are used by the ROCDPD will be introduced. These definitions may differ from the definitions within the Federal Acquisition Regulation (FAR).

- **Vendor:** Dealer, distributor, or seller characterized trading business which sells products crafted by other companies.
- **Manufacturer:** Companies which are physically responsible for the manufacturing process of end items.
- **Supplier:** Term for the group of both vendors and manufacturers.
- **Contractor:** A corporation or organization which contracts to supply certain materials or perform certain services for a stipulated sum.
- **Contracting Officer (CO):** A person with the authority to enter into, and/or administer, and/or terminate contracts and make related determinations and findings.

The following flow diagram (Figure 18) illustrates in simplified form the path that a CP case follows within the ROCDPD.

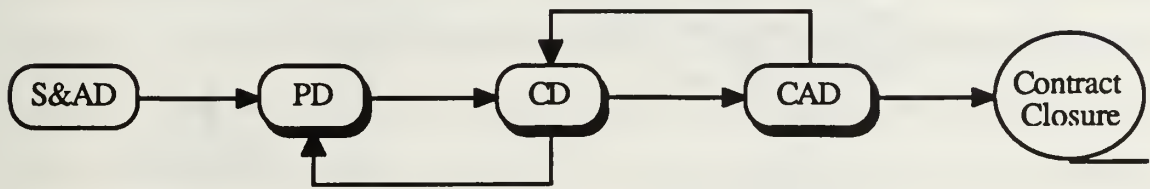


Fig. 18 Simplified CP Path

Though the ROC DAR and AOPM are two important regulations in understanding the CP process, it is expected that reviewing the step-by-step procedure within the CP can provide a more effective overview of the two documents. Based on these two regulations, the researcher developed a flow diagram for each division. It is impossible to incorporate all the contingencies into the flow diagrams, but these will be covered in the discussion.

1. Key Events in the Planning Division

After receiving the case from the S&AD, the PD starts its work on the case. The major events in the PD are illustrated in Figure 19.

a. Verify Case Content

This step verifies whether the case content is reasonable and correct. Each case includes the following important data: case number, delivery requirements, inspection and acceptance, requested items requirements, quantity, and list price. Any questions generated in this stage are normally clarified and corrected within five working days.

b. Establish Computer File

After verifying the case content, a file must be established for the

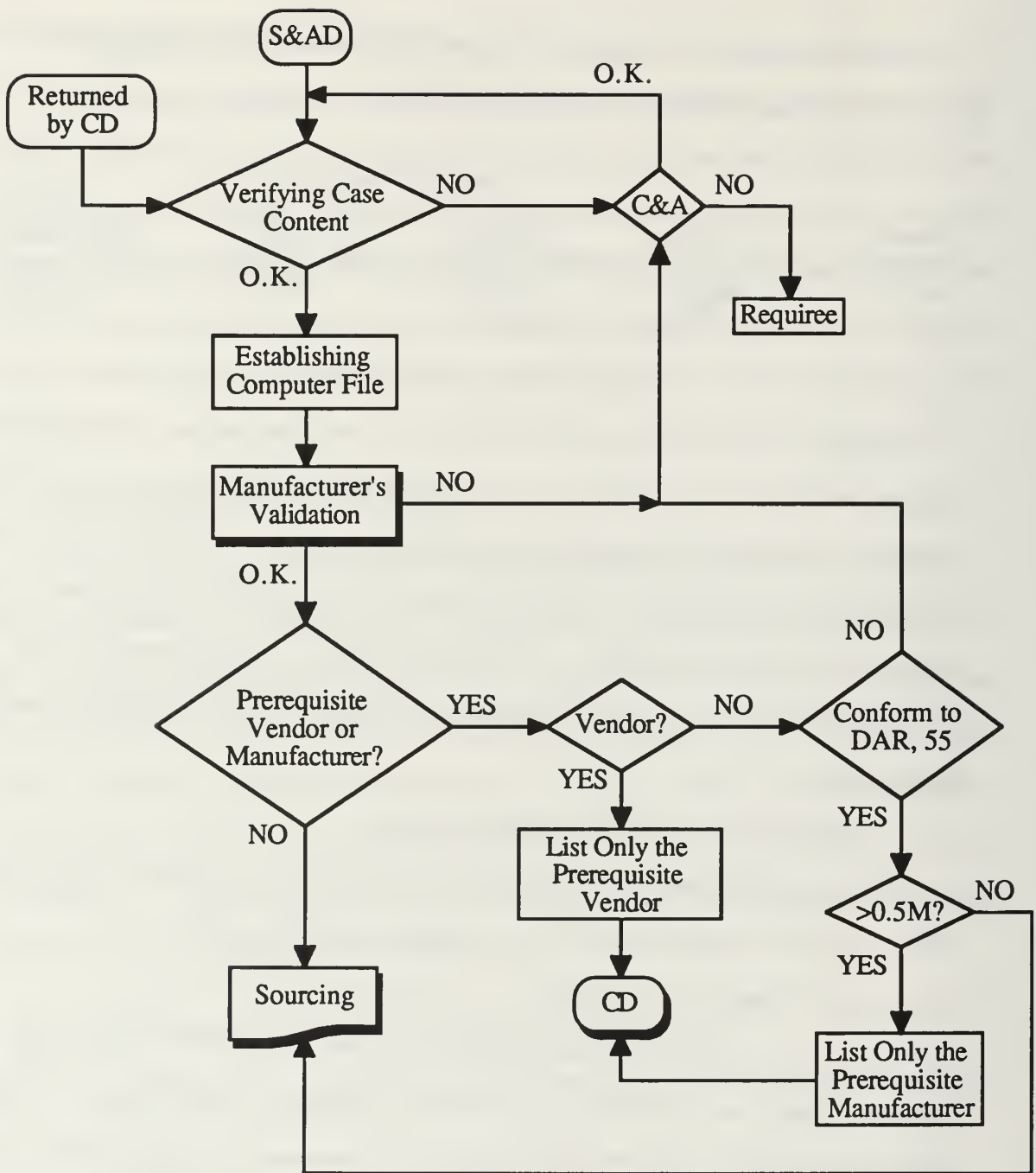


Fig. 19 PD Operational Process

case and keyed into the database. This file should be updated along with the development of the case.

c. Clarification and Amendment (C&A)

In consulting with the requiree regarding any questions related to the case, minor changes can be incorporated by PD officials; major changes should be sent back to the requiree for approval of the proposed amendments. If approval for an amendment requires more time for a portion of the items in the case, it is permissible to break the case into subcases in order to expedite the process.

d. Manufacturer's Validation

According to the DAR, defense materials should be purchased from a qualified manufacturer. Therefore, if the case attaches information about the original manufacturer, this information needs to be verified prior to processing the case. The validation process is illustrated in Figure 20. This chart applies to cases returned by the CD due to a lack of responses and for requiree requests for pricing services from PD.

(1) Debarment or Suspension

The purpose of this step is to check to see if the manufacturer is listed in the ROCDPD debarment or suspension list.

(2) D&B Business Credit Service

In this step, an inquiry is sent to Dun and Bradstreet (D&B) Business Credit Service Inc. in an attempt to prequalify the company. The report contains the business name, address, telephone number, name of chief executive, total assets volume, sales volume, number of employees, standard industrial classification (SIC) number, specific activities, parent company, and

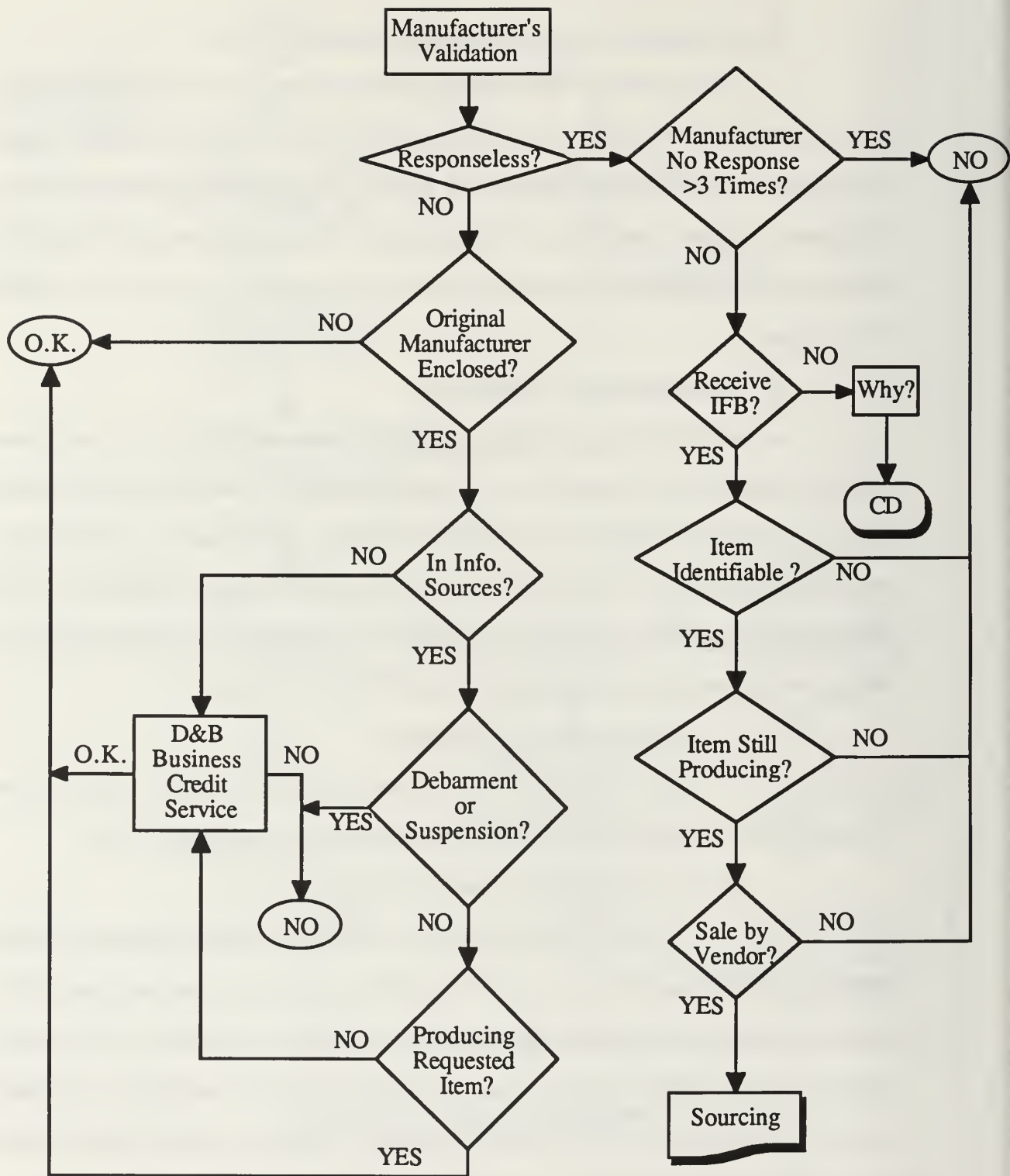


Fig. 20 Manufacturer's Validation Process

financial credit status. The key activities in this step are to verify the firm's past credit status and to determine how well the business is doing.

e. Prerequisite Vendor or Manufacturer

The purpose of this step is to see if the requiree has specified a specific vendor or manufacturer as the prerequisite or sole source vendor.

f. Vendor?

If the case required the use of a prerequisite vendor, it should be approved by authority of the requiree's system command before submission.

g. Conform to DAR, 55

DAR, 55 is an article cited in the ROC DAR which specifies a set of requirements for those cases which contain prerequisite sources. For instance, the case can specify one manufacturer or brand as its prerequisite source for an item if one of the following three conditions applies and no substitutes are available. [Ref. 9:pp. 22-25]

- Patent;
- Only one manufacturer is currently producing;
- Part, repair part or assembly which has the same manufacturer as the line product.

h. Sourcing

Sourcing is the primary process utilized by the PD to develop the solicitation list. The ROCDPD uses the following major sources of information: the Thomas Register publications, D&B publications, recommendations of the requiree, the ROCDPD database, and the Management List (ML) furnished by the US Defense Logistic Agency (DLA). The ROCDPD database contains a listing of companies based on their applications and company specific databases containing data on past contract

awards, bids, and quotations. Officials in the PD are responsible for actively soliciting suppliers who can help meet the needs of the ROCDPD. The database contains approximately 6,000 files of suppliers. The sourcing process within the Planning Division is illustrated in Figure 21.

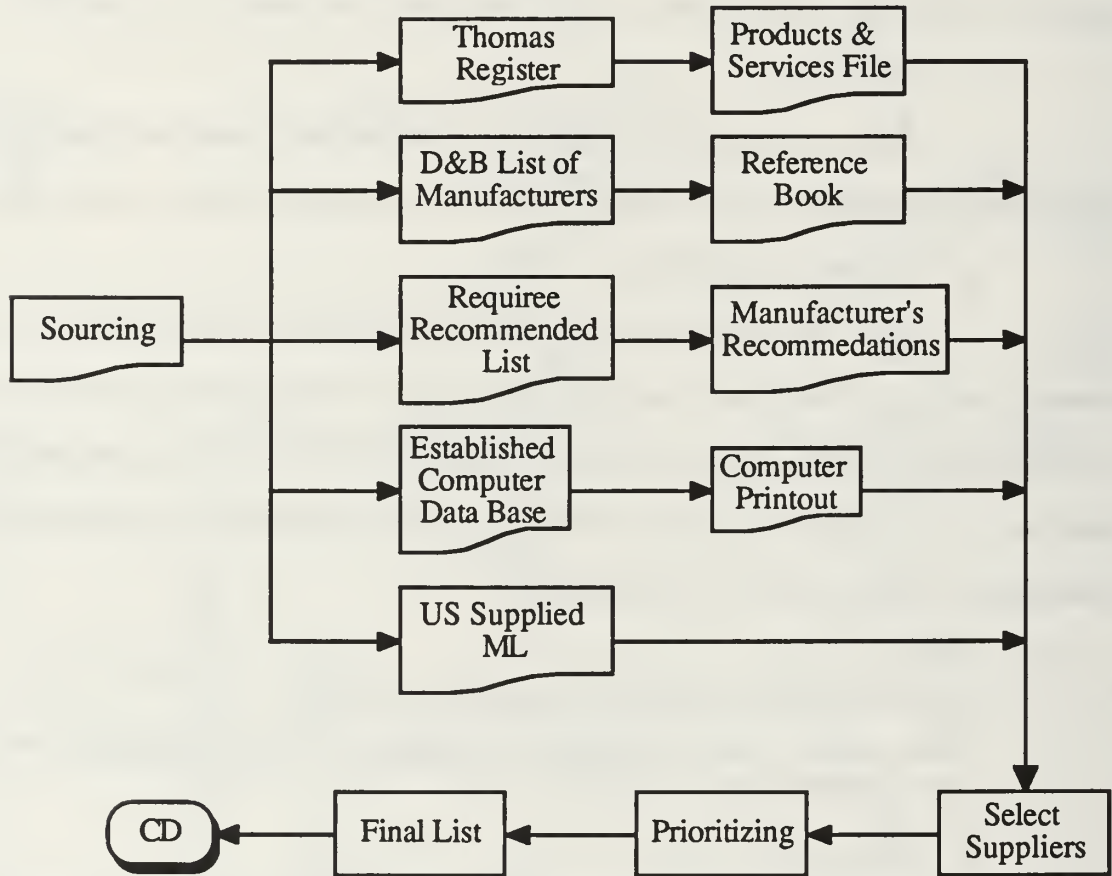


Fig. 21 Sourcing Procedures in the PD

(1) Select Suppliers

There are three officers in the PD who conduct the supplier sourcing process. The simplified process utilizes the computer printout as the basis for developing the solicitation list. If the information is not available in the computer database, then the PD officers must go to the other information sources illustrated in Figure 21. Manufacturer's recommendations can be

obtained by telephone only for the pricing service cases or for those cases returned by CD.

In cases valued at less than five hundred thousand dollars, more than three suppliers are normally selected. In cases valued at less than five hundred thousand dollars containing a prerequisite manufacturer, the original manufacturer should be added to the list if it was not the prerequisite manufacturer. If the case is for items in the same parent system and the total expected expenditure is greater than five hundred thousand dollars, the principle being followed is to select the original manufacturer of the parent system. The original manufacturer is not selected as the sole source supplier if the case contains many items and many of those are of small dollar amounts. In this case, more than three suppliers are normally selected to compete for the requirement.

(2) Prioritizing

In this step, the list of proposed suppliers are reviewed and a decision is made on the final number of suppliers to solicit. This decision is based on the priority assigned to each supplier. In the ROCDPD, suppliers are divided into two categories: manufacturers and vendors. Manufacturers are divided into three classes (A,B,C) and vendors are divided into five classes (A,B,C,D,E). Suppliers are generally classified by total assets, sales volume, and credit status. Further details in the classification criteria can be found in the AOPM. [Ref. 8:p. 7]

(3) Final List

The head of the PD has authority to change the final list but adequate justification should be attached to the changed list. In cases in

which the total expected expenditure is less than one hundred thousand dollars, the final list is approved by the Deputy Director of the ROCDPD. For cases which total more than one hundred thousand dollars, the final approval is made by the Director of the ROCDPD.

2. Key Events in the Contracting Division

The case and final solicitation list is transferred from PD to CD after the final solicitation list has been generated. The Primary functions of CD are illustrated in Figure 22 and detailed below.

a. Greater Than Certain Amount?

"Certain amount" is a term used in the DAR and is similar to the term "base dollar" in the US. It is adjusted by the MND to reflect current fluctuations of the economic environment. This amount is equal to \$1.85 million in 1991 US dollars (exchange rate is about 1:27 now). The amount utilized in the ROCDPD is one percent of this certain amount which is \$18.5 thousand (K).

b. Setting Ceiling Price

Even though the ceiling price is constrained by the budget appropriation, the ceiling price is based upon past buying experiences, past quotations, price data of ML, industry standards, market conditions, and price analysis, if applicable. If the final ceiling price is higher than the budgeted amount and the ceiling price is justifiable, the CD should inform the requiree that an increase in the budget is expected. If the appropriate authority is not confident about the justification for the ceiling price, the budget can be used to set the ceiling price for use in the bid opening.

If the requirement is for a major system, the ceiling price is the result of the efforts by many experts including engineers from the requiree's command. Since the ceiling price is confidential, the authority for approval varies with the dollar amount. For cases which total an expected expenditure of less than \$50K, the ceiling price is approved by the Head of CD. For those cases valued at greater than \$50K and less than \$1M, the ceiling price is approved by the Deputy Director of the ROCDPD. For those cases valued at greater than \$1M, it is approved by the Director of the ROCDPD.

c. Invitation for Bids (IFB)

The CD is responsible for preparing and issuing the Invitation for Bids (IFB). Normally the IFB is sent out by mail, but for urgent cases, it can be sent out by facsimile. In the case of a major system, the IFB requires the submission of cost and pricing data. If approved by the Deputy Director of ROCDPD, the CD official who is responsible for the case can add suppliers to the solicitation list after it has been determined to be in the best interest of the ROCDPD.

d. "Responseless"

If there are no bids on the due date or only one vendor's bid has been received, the case will be considered as "responseless" and is returned to PD for a new solicitation list.

e. Cost Analysis

The DCAA and SPCI are the two organizations who conduct cost analysis services for the ROCDPD. The AOPM requires that bidders submit cost or pricing data for major system contracts. It also states that cost analysis is recommended for major system contracts. [Ref. 8:p. 13]

f. Sole Source

Cases which are regarded as sole source fall under four conditions: 1) there is a prerequisite manufacturer or vendor; 2) only the original manufacturer submits a bid and sole source has been approved by authority higher than Deputy Director of the ROCDPD; 3) the case has been solicited more than twice and still only one vendor submits a bid and sole source has been approved by authority higher than Deputy Director of the ROCDPD; 4) the total expected expenditure for this case is less than the "certain amount" and it received only one bid and sole source has been approved by the Head of CD.

g. Pre-Award Negotiation

In this step, the contracting officer develops a position to be used to negotiate with the appropriate contractor. The pre-negotiation position should consider the following: the previous relevant cost analysis, past prices paid, price analysis or whatever is available for the CO to use in reaching agreement with a potential contractor.

h. Meet Requirements?

Bids are opened publicly at the time and place stated in the IFB. Upon opening the bids, an evaluation of those bids is conducted. Promptness is the essential requirement of the bid. The bid would still be regarded as valid if the bid is attached to a recommendation letter from another supplier even though the bidder is not on the solicitation list. The case requires clarification and authorization if the offer contains different specifications or recommends substitute items and are out of the capability of CD to justify whether they satisfy the original requirements. Awards can be made on an

item-by-item basis; unawarded items should be returned to PD as a "responseless" case.

Upon receiving bids for cases greater than \$0.5M, the CD sends letters to bidders requesting a certificate identifying any agent, representative, advisor, consultant or third party that has been employed or retained to solicit or secure the proposed contract on the basis of receiving a commission, brokerage or contingent fee resulting from the award of the proposed contract. The process should be delayed until the certificate has been received.

i. Source Selection

Sealed bidding is a price directed technique for source selection. Thus, price or price related factors determine source selection. The dominant yardstick for the ROCDPD is the ceiling price. The award is to be made to the lowest bid which is lower than the ceiling price. If the lowest bid is still higher than the ceiling price, the process proceeds to the auction phase.

j. Auction

The auction is sequentially conducted from the lowest bid to the highest by telephone or facsimile. The process involves asking each offeror to lower their original bids in an effort to get one of the companies to reduce their bids below the ceiling price. If all the bids are still higher than the ceiling price, the award is made in accordance with the following criteria.

- If the lowest bid is not higher than the ceiling price by ten percent and is below the appropriated budget, the case can be awarded with the approval of the Inspector General.
- If the lowest bid is higher than the ceiling price by ten percent, the case should be sent back to PD and solicited again. If the lowest resolicited bid is between ten and twenty percent and is below the appropriated budget, the case can be awarded with the approval of the Inspector General.

- If the lowest resolicited bid is more than twenty percent on each item but the total amount is below the appropriated budget, and the overrun is justifiable, the case can be awarded by an authority higher than the Deputy Director of the ROCDPD with the approval of the Inspector General. [Ref. 8:p. 17]

k. Award

Each CO's warrant is expressed in the AOPM [Ref. 8:p. 19]. The Head of the CD has the authority to enter into contracts for less than \$50K. The Deputy Director of the ROCDPD has the authority to enter into contracts for less than \$100K. The Head of the MD has been delegated the authority to enter into contracts for less than \$2M and finally the Director of the ROCDPD has an implied unlimited contracting authority.

l. Drafting Contract

The ROCDPD utilizes two uniform purchase order formats. They are for contracts less than \$50K and for contracts between \$50K and \$1M respectively. For those contracts over \$1M, the contracts are customized to reflect the complexity of the requirement.

m. Negotiation

Negotiation is the technique used to reach mutual agreement on the contract terms and conditions. In other words, how to translate the IFB and offers into a set of bilateral obligations that both parties agree upon negotiations are important. Especially for contracts that are greater than \$1M, or for ones where contractors do not agree with the uniform formats/clauses.

n. Contract Signed

Figure 23 depicts the sequence of events following the formal signing of the contract.

(1) KTR Signed?

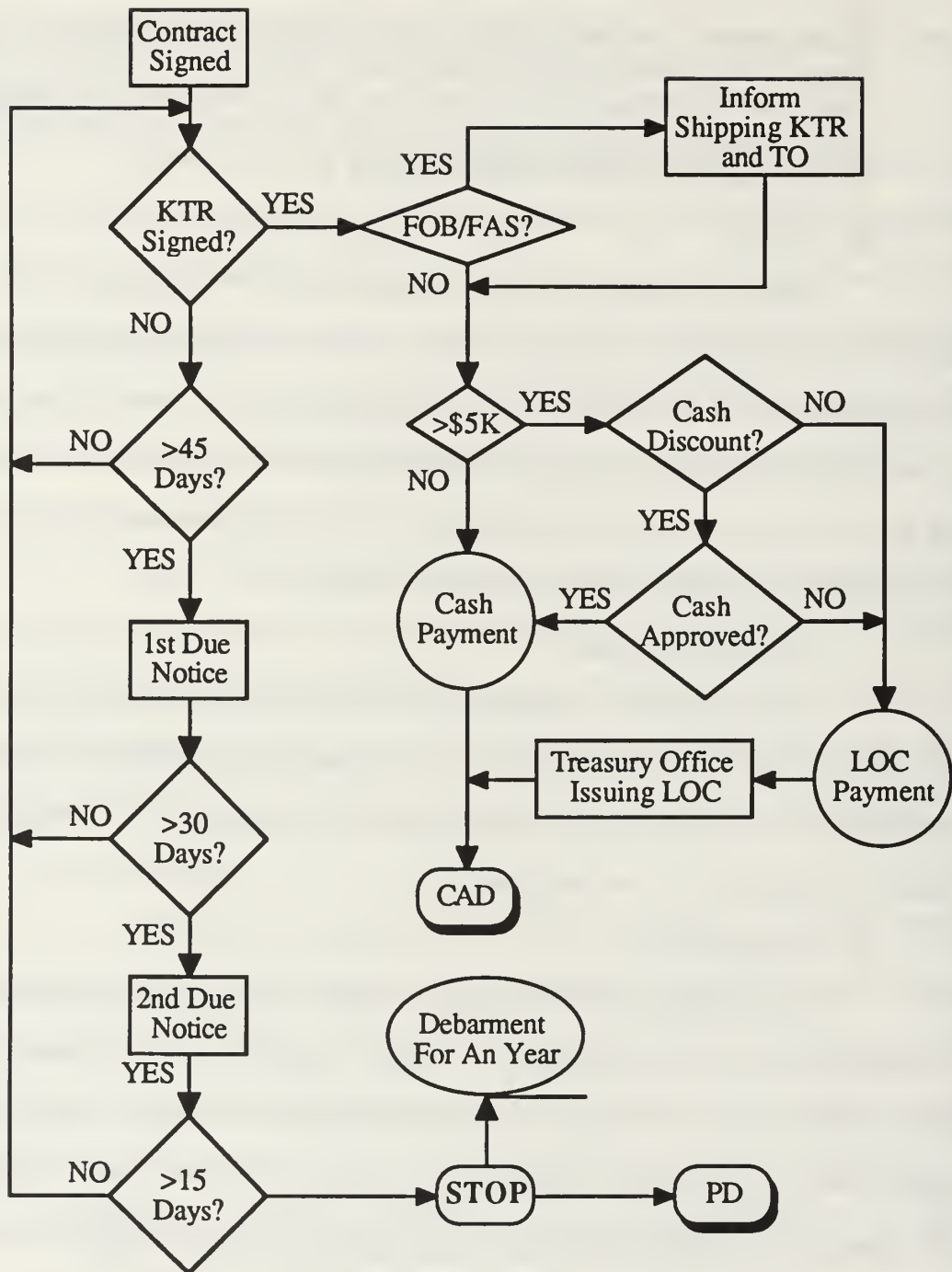


Fig. 23 Process After Contract Signed in the CD

For major system contracts, it's proper to invite the contractor to the ROCDPD to sign the contract. For other requirements, draft contracts are sent out by mail, and the replies are awaited.

(2) Free On Board or Free Alongside Ship (FOB/FAS)

If either of the shipment terms FOB (Free On Board) or FAS (Free Alongside Ship) appears on the contract, the CD assures that the shipping contractor or transportation officer acknowledges this shipment term.

(3) Letter of Credit (LOC) Payment

This is the principal method of payment by the ROCDPD. Contracts valued at less than \$5K or those greater than \$5K with cash discounts approved by an authority higher than the Deputy Director of the ROCDPD are paid by cash.

3. Key Events in the Contract Administration Division

After the contracts are signed, they are forward to the CAD whose major responsibilities are to assure timely payment, delivery, and performance on the contract. Figure 24 outlines the key functions performed in the CAD.

a. Post-Award Negotiation

Post-award negotiation is used to solve any problems in contract administration. It is always a challenge for the CAD to negotiate modifications to contracts containing small quantities and low dollar values. If the modification or delay will cause a postponement of delivery or amendment to the LOC for more than sixty days, the CAD informs the requiree and obtains their consent. If the post-award negotiation leads to any

contract modifications, the CAD shifts the contract back to CD who processes the amendment.

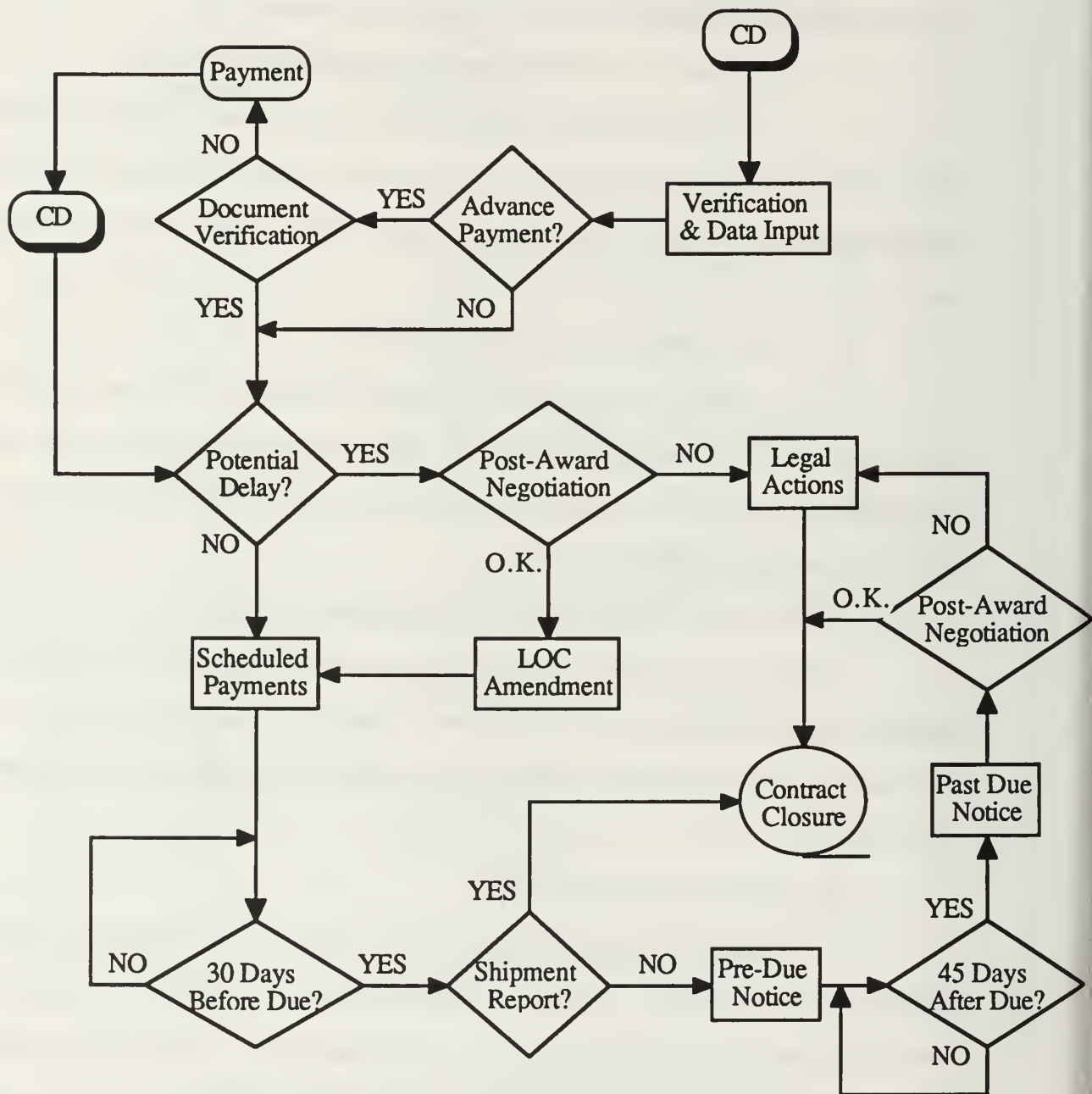


Fig. 24 CAD Operational Process

b. Document Verification

If advanced payment is required, a Standby Letter Of Credit must be obtained. The Standby Letter Of Credit should be verified by an appointed legal consultant within two weeks. If the verification passes, the treasury office pays the advance from ROCDPD funds and the contract is sent back to CD for issuance of the LOC.

E. SUMMARY

This chapter examined in detail the supplier sourcing process as it is being used in the ROCDPD. The next chapter will analyze the ROCDPD supplier sourcing process in an effort to determine areas for improvement. The process outlined in the Federal Acquisition Regulation and being followed by a Government activity (SPCC Mechanicsburg) and two private sector companies (W&W Inc. and FMS Corp.) will be used as samples for this analysis.

V. PROBLEM ANALYSIS

This chapter will identify the problems in the supplier sourcing process being used by the Republic Of China Defense Procurement Division (ROCDPD). The problems identified in this chapter and the recommendations made in the following chapter are based on the following assumptions:

A. ASSUMPTIONS

For the purpose of this research effort, the author assumes that:

- the items from which the Planning Division (PD) encounters most of their sourcing difficulties, referred to as critical items hereafter, are not confined to any specific categories of commodities;
- the existing ROCDPD computer database contains all the suppliers that have done business with the office and those contractors that have submitted applications to be put on their Bidders Mailing List;
- the analysis of the ROCDPD supplier sourcing process is based on their written regulations and not on any informal policies; and
- there are frequent requirements for small quantities.

B. PROBLEM IDENTIFICATION AND ANALYSIS

The problems identified during the course of this research effort are focused on the supplier sourcing process being followed by the ROCDPD organization. Information on the ROCDPD organization was gained by reading all the relevant manuals, publications, contract files, and computer printouts available, conducting an onsite visit for six days and through personal interviews with relevant ROCDPD personnel. Based on the above, the following problems were identified:

- Workload Instability

- Inefficient Information Access
- Poor Information Management System
- Lack of Sourcing Criteria
- Insufficient Competition
- Poor Specifications or Purchase Descriptions
- Lack of Technical Support
- Small Quantity Requirements
- Downward Trend in the Value of Procurements

1. Workload Instability

The high number of purchase requirements containing a large number of line items of varying costs, reduces each contracting official's ability to do an effective job in the supplier sourcing process. If the solicitation list is of poor quality, it affects the ability of the contracting official to obtain the required items at a reasonable price and with good quality.

a. Discussion

Most of the steps in the supplier sourcing process are completed by only three officials and two clerks residing in the Planning Division (excluding the Head of the PD). The incoming work is usually assigned to the procurement officials based on the the requiring activity's military service. The clerks are responsible for the computer related work and a portion of the paperwork support. Personal interviews with the PD staff indicated that the workload is overwhelming, especially for those cases with a large number of line items and small dollar values. Those cases take a disproportionate amount of the procurement official's time. In an effort to ascertain the average workload without the actual data, the following calculation was made. The researcher assumed that:

(1) the annual value of cases awarded in the CP area is \$450M (this figure was obtained from the ROCDPD contracting official),

(2) the normal number of work days in a year is 260 days (five days per week for fifty two weeks), then

(3) the daily transaction amount for each official is \$580,000.00 ($\$450,000,000 / 3 \text{ officials} / 260 \text{ days}$),

(4) next, the contract files were reviewed and revealed that the average contract line item price was \$20,152 per item, which meant that

(5) the average number of items transacted per person per day is 29 items per day ($\$580,000 / \$20,152$)

Although this is a very simple calculation, interviews with the CD personnel indicated that this figure is a good approximation of the workload. The daily range of contract line items per case may vary from one (for a total price of \$511K) to 58,000 individual contract line items averaging approximately \$6 per line item. This wide range of requirements makes it extremely difficult for the contracting official to effectively develop a supplier sourcing list.

b. Analysis

The supplier sourcing process can be shortened and completed in a more efficient manner by separating the purchase requirements into more relevant categories. Currently, the PD divides the purchase requirements into two categories:

(1) prerequisite supplier

(2) non-prerequisite supplier

There are no further breakdowns within each category and assignment to procurement officials are based on the military service of the requiring customers only. The US Government has decided, through their Federal Acquisition Regulation, to divide their requirements primarily by money value. They use \$25,000 as the threshold. For those requirements with an estimated value of less than \$25,000, more simplified purchasing methods and simple procurement instruments are used. This makes good business sense because that small money value should not require complicated contracts, time consuming contracting methods or extensive research and cost analysis. In addition, the FAR also prescribes different procedures and requirements for special categories of procurement such as Major Systems Acquisition, Research and Development, Construction, and Architectural and Engineering contracts.

The ROCDPD uses the same procedures and contract documents for all requirements. This leaves the officials in the Planning Division to use their own methods and judgement in order to reduce the backlog of requirements. The lack of standard procedures and a legitimate basis for decision-making will result in a poorly developed solicitation list. This occurs because the pressures of a large workload and numerous urgent requirements will not allow the procurement official the time to proactively develop a good competitive solicitation list.

Since the average workload per contracting official is extremely high, it may be beneficial to consider using procedures similar to the Small Purchase Procedures as outlined in the Part 13 of the US Federal Acquisition Regulation. The ROCDPD should consider developing a cadre of suppliers

who will accept a simplified procurement method like the Blanket Purchase Agreement. The Blanket Purchase Agreement is ideal in this situation because once the terms and conditions are agreed upon and an Agreement consummated, all transactions can occur orally. The ROCDPD should consider having one of the procurement officials processing only requirements under a reasonable monetary threshold such as \$10,000 or \$25,000. That procurement official will award orders against the Blanket Purchasing Agreements with the different suppliers. The Solicitation List will consist of all Blanket Purchasing Agreement holders. The list can be separated by relevant commodities for ease of the purchasing official.

2. Inefficient Information Access

The Planning Division has no internal ADP support or access to external information resources to assist them in locating potential suppliers and developing an effective bidders solicitation list.

a. Discussion

During the onsite visit to the ROCDPD, it was observed that the sourcing process in the PD, as described in Chapter IV, is extremely time consuming because all work is done manually. The contracting officials must physically locate vendors by researching magazines, trade publications and the retained records. The contracting officials have no capability to directly access the ROCDPD computer. This makes the information in computer database very inefficient because it is not accessible to the people that need to use it. Obtaining supplier information manually increases the procurement administration lead time significantly. If the information is not easily obtained, the contracting officials will decrease the amount of supplier

sourcing research completed in order to comply with the pressures to award contracts in a timely manner.

b. Analysis

When comparing the ROCDPD with the three activities, SPCC Mechanicsburg, W&W, Inc., and FMS Corp., the use of automated data processing (ADP) techniques and information to assist the supplier sourcing process stands out as the most significant difference. The US activities were far more advanced in their use of office automation and ADP as a method to increase productivity and manage their workload.

The ROCDPD has an established supplier information base, and a well-equipped computer center. This system needs to be expanded to allow each contracting official and procurement clerk the ability to more efficiently access the supplier information database. Secondly, the database should be organized and sorted by relevant commodities that are commonly procured by the ROCDPD. Once this is established, the database should be expanded to add more suppliers to those commodities that are poorly supported.

A person should be assigned to proactively solicit and qualify additional sources of supply. The approximately 6,000 files in the current database is inadequate as a supplier support base and for the creations of effective competition. If the additional computer equipment for the Planning Division is provided and the supplier database expanded, the supplier sourcing process will be greatly enhanced. This in turn will reduce the procurement administrative lead time and reduce the prices paid through increased competition.

3. Poor Information Management System

Although the ROCDPD has a computer center and contract information is input into the computer system, there is a lack of appropriate management information provided to the Planning Division for them to effectively do their job.

a. Discussion

Failing to obtain sufficient data for management analysis is a symptom of this problem. It was reported by the staff in the computer center that the Director of ROCDPD had issued an oral directive that mandated that data on all closed contracts will be entered into the computer. This will make the database more relevant and useful but there isn't a program that takes these data and generates useful management information. Information such as: the average procurement lead time, average backlog, list of hard-to-buy items, purchase frequency of the same item, etc., is not available for the review of top management. It is imperative that programs be written to provide management information that will allow decisions to be made on supplier sourcing as well as staffing and budget, based on past workload information.

b. Analysis

A management information system should provide the information that is relevant for decision making, problem solving, data processing, trend analysis, etc. An ideal management information system is more than just the hardware or software, it should integrate all aspects of an organization into one system. The present information system of the ROCDPD is primarily used for data storage only. The data can be retrieved but

there are many standard report formats in use by other activities that could be reviewed for implementation that will improve the management information being provided. The hardware in the ROCDPD computer center appears to be more than adequate for their needs but it is underutilized. To improve the utility of the computer for the supplier sourcing process, programs will need to be written that will extract the information in a useable report format for management's use in decision-making.

4. Lack of sourcing criteria

Contracting officials arbitrarily select sources of supply for solicitation. This is being done because of the poor information support available to them.

a. Discussion

The researcher discovered that the supplier sourcing process being used in the PD consists of an official arbitrarily selecting sources from any available information source for the solicitation list. There was no source selection criteria being followed or an organized method to assist in the process. It is the policy of the ROCDPD to foster competition in their procurements but the existing method being followed does not assure that effective competition is attained. The ROCDPD database contains approximately 6000 vendor files. This is too small a database to foster competition or to support the requirements being received by the office and there is no effective means to research and identify potential contractors from other sources.

b. Analysis

Until the ROCDPD develops a workable sourcing criteria, their ability to create an effective management information system will remain unfulfilled and the system will not be able to support decisions required for the sourcing process. Because this is the case, the best that the contracting officials can do is develop a simple bidders solicitation list that is probably of poor quality. If well defined criteria can be incorporated into the management information system, the contracting officials would be able to obtain responsible contractors from the system efficiently.

5. Insufficient Competition

Deficient supplier information and poor quality solicitation lists result in poor supplier competition for critical items.

a. Discussion

It is the belief of the contracting officials interviewed that the difficulties being encountered in obtaining fair and reasonable prices stem from a lack of sufficient competition. The current method being used to develop a solicitation list is not adequate to promote full and open competition. When compared to the information on Figure 7 (US business enterprises), the 6,000 existing files in the ROCDPD database plus companies in their publication library account for only about 38% of the total US business enterprises, while the 6,000 supplier files alone are equal to only one percent of the total business enterprises in the United States.

b. Analysis

The ROCDPD has tremendous problems locating information on suppliers who are capable of meeting their needs for old or obsolete repair

parts. They currently arbitrarily select potential sources from publications and their small vendor database. This has caused the following unique problems:

- Disputes between the PD and the CD about what sources should be included in the final solicitation list;
- Long adjusting period for new procurement officials who must become familiar with the capabilities of those publications being subscribed to by the ROCDPD;
- Lack of competition for critical items; and
- Inability to obtain fair and reasonable prices.

There are several inherent problems that must be overcome by the ROCDPD.

(1) The language barrier.

This is a management problem that is easily overcome by education but must be recognized as a problem. The contracting officials must be sufficiently knowledgeable and conversant in the English language in order to conduct market research, qualify sources and convey the ROCDPD's requirements.

(2) The ability to publicize requirements to the maximum number of potential sources.

Currently, the ROCDPD has no proactive initiatives to publicize their requirements. This is the case because it is felt by the ROCDPD personnel that their DAR does not allow them to publicize their requirements. It is not clear in the DAR whether a ROC purchasing activity located in a foreign country should publicize their proposed contract actions. Most of the concerns stem from the need for national security. This is a legitimate concern and should be considered as requirements are received but there are many requirements that are not classified in nature. These

requirements could be publicized in the US Commerce Business Daily at no risk to the ROC. Also, use of the CBD would be useful when soliciting potential sources or developing new sources.

(3) The ability to exert some leverage on their suppliers.

Because many of the requirements being solicited by the ROCDPD are for obsolete and old repair parts, and because the current method of selecting sources of supply is inadequate, many of the solicitations go to only one source. This leaves the procurement official in a very weak bargaining position. One solution to this problem is to promote competition. In order to do that, the supplier database must be expanded with reliable sources and a reasonable means of reaching a large number of sources utilized. The ROCDPD can choose to publicize their requirements in the Commerce Business Daily under the Trade Opportunity Program (TOP), or use other media such as the Wall Street Journal or the appropriate trade journals to broaden the supplier's participation.

6. Poor Specifications or Purchase Descriptions

The purchase requests are being received with poor specifications or purchase descriptions. This increases the procurement administrative lead times and communication costs because of the time and expenses incurred while obtaining clarifications from the Republic of China.

a. Discussion

The PD participates in the procurement process after the purchase requirements have been established. According to the ROCDPD personnel interviewed, this lack of participation in the planning phase resulted in the following problems:

- the inability to fully understand the requirements;
- the inability to effectively support the customer on critical items; and
- and failure of the requiring activities to accommodate advice from the PD in their acquisition plans.

The purchase requirements normally contain the NSN and/or part number, nomenclature, and quantity. This information is insufficient for procurement, especially in the cases of critical items. These defective purchase requirements bring about supplier sourcing problems particularly when they involve interchangeable items or require the development of new sources. Developing new supplier sources typically occurs when the requisition is for a sole source item, obsolete item, or when the supplier is no longer in business.

b. Analysis

This is a problem that must be solved by the ROCDPD's top management. They should establish a feedback system from the PD to the requirees or have the PD personnel participate in the early acquisition planning stage. If this could be done in lieu of returning the case, this will enable the requiree to take the PD's advice into consideration before submitting the purchase request and help eliminate the extra administration burden that is being experienced by the PD.

7. Lack of Technical Support

There is no technical support provided to the PD when they have a need to develop new sources or determine whether a suggested substitute is acceptable.

a. Discussion

One of the major problems revealed to this researcher during interviews with ROCDPD personnel was the lack of technical support. Whenever the ROCDPD requires technical support, it has to consult with the requirees who are located halfway around the world in the Republic of China. The C&A step, as presented in Chapter II, causes time-consuming and costly communication problems.

b. Analysis

In the US Government and industry, the problem associated with the lack of technical assistance is usually solved by establishing a specialist group. However, because the requirements of the ROCDPD are wide ranging, a cost/benefit analysis should be conducted to justify the necessity for such a specialist group. This cost/benefit analysis should consider the use of a US company to provide that service on an as-needed basis. There are several companies that specialize in hard-to-find repair parts. The cost/benefit analysis should also consider using the US Government as a resource for the research effort on a reimbursable cost basis.

8. Small Quantity Requirements

Small quantity requirements increase the costs and the workload in the supplier sourcing process.

a. Discussion

During the onsite visit to the ROCDPD, the researcher reviewed many of the retained contract files and interviewed the contracting officials. It became apparent that orders for small quantities were among the most difficult for the contracting personnel to award. The requirements were

usually for repair parts on equipment that were either obsolete or very old. In addition to that, the small quantities decreased the buyer's leverage and significantly increased the contract price.

b. Analysis

A well-known example, the infamous Sperry \$110 diode, illustrates the impact of purchase quantity on the unit price. [Ref. 11:p. 3]. Figure 25 shows the dramatic decrease in the price of the diode, from \$110 each when only two are purchased, to \$2.25 each for a quantity of 100, to just \$.27 each for a quantity of 1,000.

The ROCDPD should strive to consolidate the requirements from different requirees or participate in the planning of future requirements in a concerted effort to increase the quantities in their requirements and take advantage of quantity discounts.

Element	Quantity		
	2	100	1,000
Spares support cost	\$181.74	\$181.74	\$181.74
Material (\$.04 each)	.08	4.00	40.00
Subtotal	181.82	185.74	221.74
G/A at 10 percent	18.18	18.57	22.17
Total cost	200.00	204.31	243.91
Profit at 10 percent	20.00	20.43	24.39
Total price	220.00	224.74	268.30
Unit Price	<u>\$110.00</u>	<u>\$2.25</u>	<u>\$.27</u>

Fig. 25 Unit Price Calculations -- Sperry Diode

9. Downward Trend in the Value of Procurements

The downward trend in the value of procurement, as announced in the Joint Communiqué issued by the United States and the PROC on August

17, 1982, jeopardizes the long-term relationship between the ROCDPD and their contractors.

a. Discussion

Subject to the 1982 Joint Communiqué, the future value of procurements by the ROCDPD is decreasing. The ROCMND is diverting their dependence on the US for defensive military supplies to international countries. This trend could erode the goodwill of the suppliers and decrease the morale of the employees in the ROCDPD. This goodwill is a very important asset for the ROCDPD, especially in the supplier sourcing process. The supplier's goodwill is also a powerful force that affects the fair and reasonable price of an item.

b. Analysis

The buyer-supplier relationship is critical to the ROCDPD because of the downward trend in procurement dollars which the ROCDPD is facing. Maintaining and improving this relationship and goodwill is the responsibility of all officials who deal with suppliers. This is a strategic or tactical issue in the sourcing process. One unique aspect of the commercial supplier sourcing process is tailoring the solicitation list. As discussed in Chapter IV, this step can be utilized as a strategy to help the buyer in the buyer-supplier relationship. The ROCDPD should establish a long term buyer-supplier relationship with a few quality companies. Once the long term relationship is established, the PD can also shorten the supplier sourcing process.

C. SUMMARY

An important statement which depicts the determinants of the buyer's power appeared in an article of Harvard Business Review in 1979. Buyers can enhance their purchasing power by simply following those determinants.

Figure 1 of the same article prescribed the determinants as: [Ref. 10:p. 59]

- Buyer concentration versus firm concentration;
- Buyer volume;
- Buyer switching costs relative to firm switching costs;
- Buyer information;
- Ability to backward integrate;
- Substitute products; and
- Pull-through

In the same article, the author further explained those determinants by relating some real-world examples. It alleged that a buyer group is powerful if: [Ref. 10:pp. 62-63]

- It is concentrated or purchases in large volumes. Large-volume buyers are particularly potent forces if heavy fixed costs characterize the industry--as they do in metal containers, corn refining, and bulk chemicals, for example--which raise the stakes to keep capacity filled.

- The products it purchases from the industry are standard or undifferentiated. The buyers, sure that they can always find alternative suppliers, may play one company against another, as they do in aluminum extrusion.

- The products it purchases from the industry come from a component of its product and represent a significant fraction of its costs. The buyers are likely to shop for a favorable price and purchase selectively. Where the product sold by the industry in

question is a small fraction of buyers' costs, buyers are usually much less price sensitive.

- It earns low profits, which create great incentive to lower its purchasing costs. Highly profitable buyers, however, are generally less price sensitive (that is, of course, if the item does not represent a large fraction of their costs).

- The industry's product is unimportant to the quality of the buyers' products or services. Where the quality of the buyers' products is very much affected by the industry's product, buyers are generally less price sensitive. Industries in which this situation obtains include oil field equipment, where a malfunction can lead to large losses, and enclosures for electronic medical and test instruments, where the quality of the enclosure can influence the user's impression about the quality of the equipment inside.

- The industry's product does not save the buyer money. Where the industry's product or services can pay for itself many times over, the buyer is rarely price sensitive; rather, he is interested in quality. This is true in service like investment banking and public accounting, where errors in judgement can be costly and embarrassing, and in business like the logging of oilwells, where an accounting survey can save thousands of dollars in drilling costs.

- The buyers pose a credible threat of integrating backward to make the industry's product. The Big Three auto producers and major buyers of cars have often used the threat of self-manufacture as a bargaining lever. But sometime an industry engenders a threat to buyers that its members may integrate forward.

These determinants coincide with the problems identified in the previous section and were discovered by the researcher to apply to the ROCDPD.

This chapter discussed and analyzed the problems being experienced by the ROCDPD in the supplier sourcing process. The next chapter will provide the conclusions derived from this research and make some recommendations that could help improve the ROCDPD's supplier sourcing process. Finally, the research questions will be answered.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

This chapter will discuss the conclusions and recommendations resulting from this thesis research. After presenting the conclusions and recommendations, the research questions will be answered. Finally, recommendations for further research will be provided for consideration.

B. CONCLUSIONS

- 1. The Republic of China Defense Procurement Division (ROCDPD) can improve its supplier sourcing process.**

The current supplier sourcing process being followed by the ROCDPD personnel is very inefficient and does not foster competition. The computer database of suppliers is too small to adequately support the requirements for the Planning Division (PD) to develop adequate bidders solicitation lists. There is no proactive initiative within the PD to continually increase the supplier database with qualified companies to increase competition. There are no technical assistance resources to help develop alternate sources or to help determine if substitute items being proposed are appropriate. The information in the computer database is not used to its full potential to help management make informed decisions. The recommendations for improvement are provided in section C of this chapter.

- 2. The ROCDPD continues to encounter supplier sourcing and pricing problems primarily due to the small quantities being submitted on purchase requests.**

Because the Republic of China's military is small and each service submits their purchase requests separately, the required quantities for each item is normally very small. These small quantities, coupled with the small database of suppliers, has made it very difficult for the contracting officials to obtain the items and if they are able to find a source, it is difficult to negotiate a fair price.

- 3. Top management must recognize that the supplier sourcing system needs to be improved and support the Commercial Procurement (CP) area by providing better resources.**

Top management's support is vital if any improvements are to be made in the supplier sourcing process. The ROCDPD should consider changing the regulations if they are obsolete or not appropriate in the United States. The DAR requirement for sealed bidding should be reconsidered and the small purchase procedures outlined in the US Federal Acquisition Regulation considered for use. The interpretation that the DAR does not allow publicizing contract requirements in the US Commerce Business Daily should be dispelled and synopsis allowed. There are other requirements in the DAR that should be reevaluated if it is an impediment to the efficient operation of the ROCDPD since they operate in a similar manner to a commercial firm in the US.

Top management should ensure that the mission of the ROCDPD is well understood. They should set the objectives and ensure that all elements

are working towards the successful achievement of that objective. All of the areas should work as a team in supporting the mission of the office.

C. RECOMMENDATIONS

After a thorough literature research was conducted and by comparing the sourcing practices used by the ROCDPD, two commercial businesses, and a DoD Inventory Control Point, the following recommendations are provided. The recommendations are focused toward improving the ROCDPD's supplier sourcing process.

- 1. Top management should take a more proactive role and take appropriate actions to improve the ROCDPD supplier sourcing process.**

In order to implement a series of actions to improve the supplier sourcing process, top management must be intimately involved and responsible for their success. Many issues should be handled with care and skill because there is an inherent resistance to change. Such factors as the employee's resistance to change, employee's fear of new technology, the problems of maintaining normal operations during the transient period, reorganizing to incorporate the system changes, and the training required must be carefully orchestrated by top management.

- 2. Implement steps to improve and upgrade the office automation equipment within the ROCDPD.**

Office automation improves the efficiency of the workforce and provides the capability to receive necessary on-line information. Office automation equipment is especially efficient when searching a large database or producing repetitive documents. The supplier sourcing process can be

greatly enhanced by increasing the availability of office automation equipment.

3. The management information system in the ROCDPD should be improved or modified to provide better support to the Planning Division.

A well-organized management information system is necessary for the success of the office automation initiatives. The ROCDPD should consider developing a comprehensive coding system to help automate the supplier sourcing process. This coding system could assist in identifying contractors to purchase requirements, classifying critical items, identifying substitute items, etc. The system used by the the US Navy's SPCC should be reviewed and considered for potential use by the ROCDPD. The ADP system should also provide the capability for storing historical records automatically and printing out standard forms and contracts. In other words, the ADP system should be the central core of the ROCDPD procurement process. This will improve not only the supplier sourcing process, but will ensure that the organization is efficiently completing its mission.

4. The ROCDPD should participate in the acquisition planning phase and institute a feedback system.

Early participation and feedback in the acquisition planning phase will help refine and improve the quality of purchase requirements and possibly increase purchase quantities, by combining the different military services requirements. Any improvements in this area will reduce the procurement administrative lead times and help locate competitive sources of supply by improving the quality of the specifications and possibly allowing the ROCDPD time to develop more competitive sources for the requirement.

Communication costs and technical assistance may be reduced through these initiatives. Thus, the need for technical assistance and the dialog between the PD and the requiree will be reduced.

5. The ROCDPD should publicize their proposed contract actions for unclassified items.

Publicizing proposed contract actions in the CBD is in the best interest of the ROCDPD. To improve the competition among contractors for unclassified requirements, the US CBD is a superb media for publicizing the ROCDPD's contract requirements. Since most of the purchase requirements of the ROCDPD are for defense materials, and the companies in the United States use the CBD as a standard information source, the ROCDPD could greatly increase their supplier base. This will increase competition and reduce the prices paid for the materials.

6. The ROCDPD should consider dividing their requirements into more efficient categories.

The US Federal Acquisition Regulation created simplified small purchase procedures for requirements valued at under \$25,000. This allowed their contracting activities to award contracts in a faster and more efficient manner. The ROCDPD should consider using a similar system and establish a group of categories that presorts the requirements. The categories could differentiate by the dollar amount, commodity classification, or a combination of the two.

7. If the ROCDPD implements recommendation 6, the office should develop clear criteria and procedures.

This recommendation is made to ensure that arbitrary and inconsistent decisions are not being made by the ROCDPD personnel when carrying out the supplier sourcing process.

8. The ROCDPD should establish long-term relationships with suppliers.

A long-term relationship with quality suppliers could ensure that critical items are available as the need arises. It makes good business sense to identify the most critical items and establish relationships with suppliers that can provide them. To reduce the possibility of ethical problems, the long-term relationship should be established with selected suppliers and should be brought to the attention of the Head of PD or higher.

D. ANSWERS TO RESEARCH QUESTIONS

The primary research question is:

How can the Republic of China Defense Procurement Division improve its system by improving its supplier sourcing process?

The answers to the primary research question are contained in section C above. The recommendations resulting from this research are the answers to the primary research question.

The subsidiary research questions are addressed below.

1. What are the ROCDPD's standard supplier sourcing procedures?

The standard supplier sourcing procedures of the ROCDPD were discussed and illustrated in flow chart format in Chapter II. More specifically, Chapter II focused on the purchasing procedures of the Commercial

Purchasing (CP) area. The CP area is divided into three divisions, they are the: Planning Division (PD), Contract Division (CD), and the Contract Administration Division (CAD). The purchase requirements flow through these three divisions sequentially, as depicted in Figure 6. The supplier sourcing process in CP is primarily conducted by the PD.

The supplier sourcing process in the PD can be summarized in three steps:

- a. Evaluating the requirements;
- b. Separating the requirements into three categories (prerequisite suppliers, non-prerequisite supplier, and responseless); and
- c. Supplier Sourcing or the development of the bidders list.

2. What types of supplier sourcing problems are being experienced by the ROCDPD?

The problems have been identified and discussed in Chapter V. They are:

- Workload Instability
- Inefficient Information Access
- Poor Information Management System
- Lack of Sourcing Criteria
- Insufficient Competition
- Poor Specifications or Purchase Descriptions
- Lack of Technical Support
- Small Quantity Requirements
- Downward Trend in the Value of Procurements

3. What resources of information are available to the ROCDPD?

The available information resources were discussed in the previous chapters by addressing the information resources being utilized by the

ROCDPD, the SPCC, W&W Inc., and FMS Corp. The ROCDPD has access to most of these information resources, or can develop and improve their own integrated ADP system. The system should be capable of increasing access to supplier sourcing information by PD personnel. The final product should be a bidders solicitation list of qualified suppliers that fosters competition.

Information sources that should be considered for use are:

- a. SPCC supplier and repair parts database,
- b. Electric Business Information databases, and
- c. Commercial Contractors' databases similar to W&W's that contain supplier information or "hard to find" items.

4. Can the ROCDPD employ some of the methods and procedures being utilized by DoD activities?

There are three methods/procedures that are utilized by DoD activities (or outlined in the FAR) that are suitable for immediate consideration by the ROCDPD. They are:

- a. An improved ADP system to include more hardware and programs to increase efficiency and decision making,
- b. Requirements Determination method similar to Figure 2 should be considered, and
- c. Use of the US Commerce Business Daily to publicize contract requirements.

E. AREAS FOR FUTURE RESEARCH

1. A research effort in the contract administration area of the ROCDPD should be conducted to determine what could be done to improve that effort.

2. Conduct a study to determine how the Information Management System can be improved at the ROCDPD.
3. Conduct a research effort into the use of outside resources to provide contracting, auditing, technical as well as purchasing support. A contracting out study similar to OMB Circular A-76 on the ROCDPD.

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